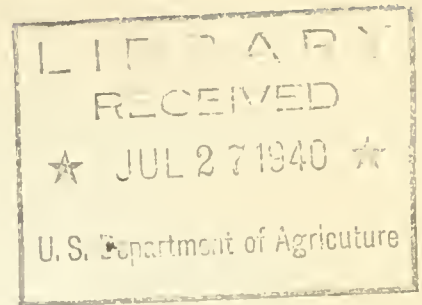


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## THE MORE IMPORTANT RECORDS FOR JUNE

The grasshopper situation still remains severe over a large part of the West. Practically all Melanoplus mexicanus Sauss. had reached the adult stage during the first week in June in the Imperial Valley of California and Arizona, and were starting to transform to adult in New Mexico and Colorado. In the northern Panhandle of Texas, southern Oklahoma, and Kansas about three-fourths of M. mexicanus were in the mature stage during the second week of the month. During the first week of the month hatching was practically completed in Nebraska, Iowa, Montana, Wyoming, and Utah. By the third week in the month hatching was practically completed in North Dakota, Minnesota, and Michigan.

Up to the third week in June the large bands of Mormon crickets in Big Horn and Yellowstone Counties, Mont., were still at high elevations and are not likely to migrate into crop areas, as the vegetation is abundant. The crickets are now largely in the adult stage. In Utah and Idaho, although there was some migration crops were adequately protected by control measures. The infestation in South Dakota is quite heavy in limited areas and some crop damage is being reported from Nevada.

Associated with the very delayed spring, severe cutworm injury to a wide variety of truck crops was reported from the North Central and East Central States and in parts of California.

Heavy flights of moths of the beet webworm were observed in North Dakota and Utah and severe damage was being done by the larvae in parts of Washington State. Heavy defoliation of hardwood trees by May beetles was reported from the Middle Atlantic and East Central States.

General reports of damage by the rose chafer were reported from the New England, Middle Atlantic, and East Central States.

During the third week in the month Japanese beetle started emergence in Delaware, District of Columbia, and Virginia.

Serious crop damage by wireworms is reported from New England, Middle Atlantic, East Central, and North Central States, and from Idaho.

No serious damage is expected from chinch bug in Ohio. Owing to rank, thick growth of wheat, the overwintered adults migrated to corn to a greater extent than usual. Weather conditions unfavorable to chinch bug development very much reduced the small-grain infestations in Indiana and Illinois. Rather severe infestations are reported from Iowa, Nebraska, Kansas, Missouri, and Oklahoma.

European corn borer moths appeared considerably later than usual in New England and New York. This insect appears to be more abundant than usual on the Eastern Shore of Virginia.

Rather serious damage to corn by the larvae of the grape colaspis was reported from Indiana and Illinois.

Sitona cylindricollis Fah. was reported for the first time from the State of Illinois, where it was attacking sweetclover. S. lineata L. was reported from United States for the first time. It was discovered attacking peas in Washington.

Owing to heavy injury by the alfalfa weevil, alfalfa was cut early in many parts of Utah.

In Idaho the clover root borer so seriously damaged clover fields that large numbers were plowed out and replanted to other crops.

In Ohio, Indiana, and Missouri peak flights of codling moth occurred late in May, and during the first week in June large numbers of larvae were entering fruit. During the first 2 weeks in June moths appeared in peak numbers in eastern New York. In the second week in June they were seen in the western part of New York. Peak flight in Delaware occurred during the third week in June.

Throughout June oriental fruit moth was generally prevalent from Delaware to Florida and Mississippi.

Plum curculio was occasioning serious damage in Connecticut and eastern New York during the latter part of the month. Larvae were pupating in Virginia on June 24. The peak of emergence from dropped fruit in the Fort Valley section of Georgia occurred on May 21, this being over 3 weeks later than last year. The infestation in the Georgia peach belt, however, was considerably lighter than usual. In the East Central States this insect was very abundant.

The fall webworm appeared about 3 weeks later than usual in Georgia. This insect was moderately abundant on pecan in Florida and one of the heaviest early infestations in many years occurred on pecan in Mississippi. Pecan phylloxera is also seriously damaging pecan trees in Mississippi.

California red scale is more generally prevalent in the citrus areas of California than it was last year. Black scale is severely affecting citrus in some areas.

Citrus thrips is increasing generally in southern California and considerable scarring of the new crop of oranges has been observed.

Very general damage to a wide variety of crops by blister beetles was reported from Georgia, extending around the Gulf region to Texas and Arizona, and also from North Dakota and Minnesota.

Seed corn maggot, as a result of the delayed spring, was causing severe injury from southern New England westward to Michigan and also in the Vancouver area of Washington.



Mexican bean beetle was becoming abundant in New England and New York during the second week in the month.

The bean leaf beetle was abnormally abundant from Maryland to Indiana, and southward to the Gulf.

Many reports of the damage by cabbage aphid on areas in the East Central States that were planted with southern plants.

The boll weevil was below normal in abundance throughout the Cotton Belt except in eastern Texas.

Toward the last of the month the cotton flea hopper started to increase in numbers from Mississippi to Texas.

Early in the month cotton leaf aphids were reported as very numerous throughout the Cotton Belt, except in Texas.

Full-grown larvae of the cotton leaf worm were found on June 22 in Gilchrist County, Fla.

Cankerworms were generally prevalent, often completely defoliating trees, from Pennsylvania westward through the East Central States to North Dakota, South Dakota, and Nebraska.

The European pine shoot moth was reported as seriously damaging pines in Connecticut, New York, and Michigan.

#### THE MORE IMPORTANT ENTOMOLOGICAL FEATURES IN CANADA FOR MAY AND JUNE 1940

Hatching of grasshopper nymphs was becoming general by the end of May in many areas in the southern part of the Prairie Provinces. The infestation was reported particularly severe in southwestern Saskatchewan and southeastern Alberta. In the latter area grasshoppers as numerous as 800 per square foot had destroyed most of the stubble crops by mid-June, in spite of an intensive poisoning campaign. Damage was continuing at the end of June. In western Manitoba cool weather and good growing conditions had retarded crop injury throughout the month, but poisoned-bait mixing stations were in operation at various points and it was feared that considerable damage may occur later, if the weather turns hot and dry.

As during the last 2 years, cutworms continued to be scarce in the Ottawa Valley. In the West local damage in gardens was caused by the red-backed cutworm and its allies at Brandon, Manitoba, and Saskatoon, Saskatchewan. This species caused some losses to sugar beets in irrigated areas of Alberta. The pale western cutworm caused severe damage in some fields at Bow Island, Alberta.

Wireworms caused some damage in southern and southwestern Manitoba, and thinned crops generally throughout much of Saskatchewan and Alberta. In south-central Saskatchewan surveys showed from 8 to 40 percent damage to wheat seeded

on summer-fallow, and general damage was observed in northwest and west-central districts; 10 percent damage occurred from Redvers to Regina to Saskatoon, and between Parkside and Prince Albert, with very little in the northeast. In the Three Hills, Drumheller, and Rosebud districts of Alberta, seed damage by wireworms resulted in from 5 to 40 percent thinning of wheat in certain fields. Some infestation occurred throughout the whole Peace River area of Alberta, losses ranging from 1 to 50 percent.

Several thousands of square miles in central Ontario, in the Peterborough-Perth zone, are extremely heavily infested by third-year white grubs. These grubs caused tremendous damage in 1939, but injury in 1940 will be largely of a secondary nature. An extensive major flight of June beetles will occur in 1941 throughout this region.

Wheat, particularly winter wheat, in many counties in eastern and central Ontario is infested by the eastern wheat stem sawfly (Cophus pygmaeus L.). In the Nobleford district of Alberta there is a severe infestation of the wheat stem sawfly (C. cinctus Nort.). The sawflies were emerging in numbers on June 18. A heavy outbreak is expected over large areas in Alberta.

In southern Alberta and Saskatchewan adults of Say's stinkbug had emerged from hibernation and had resumed full activity by April 30. Overwintering mortality was about 37 percent. The species increased rapidly in numbers with the advent of hot weather in June.

Adults of the Colorado potato beetle were flying at St. Jean, Quebec, during the second half of May. In the Ottawa district the first eggs were observed on June 7. Adult beetles were seen in gardens at Saskatoon, Saskatchewan on May 17.

The potato flea beetle and the striped flea beetle were becoming abundant on host crops in the Ottawa district by mid-June. Flea beetles were reported to be a serious pest in gardens in the Brandon area of Manitoba early in June.

The sweetclover weevil (Sitona cylindricollis F.) is prevalent throughout Manitoba and central and eastern Ontario. From 5 to 10 percent of the leaf area had been destroyed in infested districts of Ontario by the early part of June, and damage was increasing. Crop injury in Manitoba had reached economic proportions in some areas by mid-June. In districts where abundant rainfall had occurred, however, the plants had been able to outgrow the injury without loss.

The striped pea weevil (Sitona lineata L.) caused local severe damage in the Victoria district, British Columbia. It was first recorded in North America in this region in 1937.

The weevil Brachyrhinus singularis L., discovered in the Victoria district, British Columbia, in 1937, has become a serious pest of garden plants, of which it attacks a great variety.



The onion maggot and the cabbage maggot are serious pests in the Ottawa district of Ontario and Quebec. In some fields the onion maggot has destroyed 50 percent of the seedlings.

The European earwig has increased in numbers in the Vancouver district, British Columbia, probably as a result of the mild winter.

At Vineland Station, in the Niagara district, Ontario, the first codling moth adult emerged from tree bands on May 30, several days later than at any time in the last several years.

The eye-spotted budmoth appears to be the most prevalent insect in apple orchards in the Annapolis Valley, Nova Scotia, this season.

The strawberry weevil has been more injurious in the Niagara district, Ontario, than for many years. Severe damage by this pest in strawberry plantations was also reported in Prince Edward Island.

Specimens of the brown dog tick (Rhipicephalus sanguineus Latr.) were taken from a dog at Espanola in northern Ontario in March. This appears to be a new record for Canada. The animal had visited Washington and New York the previous November.

The Rocky Mountain spotted fever or paralysis tick (Dermacentor andersoni Stiles) is extremely abundant in southern Alberta and has been found at Swift Current, Saskatchewan, the most easterly record in Canada. Several yearling colts infested by the ticks in the latter locality died of tick paralysis, constituting the first authenticated report of the disease in Saskatchewan.

GENERAL FEEDERS

GRASSHOPPERS (Acrididae)

California. S. Lockwood (June 10): Situation in Kern County continues severe. Principal species in the infested part of the county is Melanoplus devastator Scudd., followed in much fewer numbers by the valley grasshopper (Oedaleonotus enigma Scudd.), and in certain cottonfields in the Kern Lake area by M. differentialis Thos. However, the last two are not abundant enough to cause any considerable amount of damage. M. devastator is now causing some damage to crops in the northeastern part of Los Angeles County. M. mexicanus Sauss. is the principal species in the alfalfa fields of the Palo Verde Valley of Riverside County, and in the cropped areas of Imperial County. Control measures have slowed these down to a marked degree. In some parts of the high areas of San Diego County M. devastator has appeared in outbreak numbers for the first time in the reporter's recollection. Heretofore the desert areas of San Diego County on the eastern slope of the coastal range have been damaged by M. mexicanus, but, with this exception, the greatest damage in the hills has been done by the clear-winged grasshopper (Camnula pellucida Scudd.), and on the coastal hills in the northwestern part of the county, O. enigma has also done considerable damage. Depredations by M. devastator are now occurring on the western foothill section in Tulare County and in Mariposa and Tuolumne Counties. C. pellucida has surprisingly occurred in outbreak numbers in certain rather small restricted areas in central Tulare County, in the lower Sonoran life zone. Several species are occurring now in Siskiyou County in numbers sufficient to warrant control measures.

B. M. Gaddis and assistants (June 2-8): In the Imperial Valley of Imperial County 95 percent of the M. mexicanus are now in the adult stage mating is taking place and, in many areas, egg development is well advanced. Hoppers in the mountainous areas near Laguna and Palomar, in San Diego County, which have been retarded in development by cold weather are now beginning to develop, with first- to third-instar M. devastator the dominant species. Fifth- and sixth-instar O. enigma and M. devastator are dominant on the Viejas Indian Reservation in that county. A new outbreak of small proportions is reported as developing in the region of West Riverside, in Riverside County, and a new and serious outbreak of M. devastator and O. enigma in San Bernardino County has developed in idle land, threatening surrounding vineyards and injuring some 500 acres of melons and grapes.

<sup>1/</sup> Arizona. (June 2-8): Infestations in several districts of Maricopa, Graham, and Gila Counties continue to be serious. Threatening or severe infestations are present, the severe areas being spotted and confined mor

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<sup>1/</sup> Where no name is given after the State the report is by B. M. Gaddis and assistants.



or less to alfalfa fields and rangeland. M. differentialis is the dominant species in Maricopa County at present. Most of the M. mexicanus are in the adult stage, and females are gravid. (June 16-22): In orchards on some of the small ranches in Cochise County, adults of the large green brush grasshopper, Schistocerca shoshone Thos., have appeared in fruit trees in large numbers. This grasshopper is doing considerable damage to the fruit and foliage.

New Mexico. (June 2-8): Dissosteira longipennis Thos. adults were first reported in the vicinity of Artesia, in Eddy County, about June 7. (June 16-22): M. bivittatus Say and M. differentialis comprise about 95 percent of all species present in San Miguel County; M. femur-rubrum and M. mexicanus comprise the remaining 5 percent. In Sandoval, San Miguel, Colfax, and Valencia Counties, M. differentialis and M. bivittatus are the dominant species. About 10 percent are adults; nearly all of the M. mexicanus and M. femur-rubrum are now adults. Damage has been rather severe in some alfalfa fields, and migrations into adjoining small-grain fields have taken place. About 50 percent of the D. longipennis in Eddy and Quay Counties are now in the adult stage. Populations are very light in this part of the State.

Colorado. (June 2-8): The known infestations of D. longipennis in Pueblo, Otero, Cheyenne, and Las Animas Counties had been almost 100-percent cleaned by the close of the week. Natural control has been an important factor in reducing populations in these counties, the chief contributing agencies being the adverse weather conditions during the hatch and the activity of birds. The only remaining heavy D. longipennis infestation in Colorado is an area of about eight sections in Lincoln County. In the crop-hopper areas of northeastern Colorado, cool and stormy weather prevailed during the week, retarding development and movement, and preventing crop damage to any great extent. Infestations in Adams, Weld, and Larimer Counties were reported as still confined largely to irrigated alfalfa fields, with M. mexicanus still the dominant species in this area, representing about 40 percent of the populations. The hatch in northeastern Colorado was practically completed except for M. differentialis and M. femur-rubrum; adult M. confusus Scudd. and M. occidentalis Thos. were reported in Weld County during the week. A heavy infestation is present in most of the southeastern part of Baca County, where 25 percent of M. mexicanus are in the adult stage. D. longipennis in Baca County have now reached the sixth instar, with the greater number in the fourth and fifth. Approximately 50 percent of M. mexicanus in Baca County have become adult. A minor flight of these hoppers was observed on June 14, covering an area of approximately 50 square miles, and most of the hoppers were flying higher than 1,000 feet above the ground. In Lincoln and Kit Carson Counties, some of the M. mexicanus have become adult; however, most are in the fifth instar. M. bivittatus and M. packardii Scudd. are next in dominance, with M. packardii matured. Mature M. occidentalis were reported in Park County at about 40 per square yard. Nymphal migrations are occurring daily back and forth in abandoned and idle land, some migrating into crops. (June 16 to 22): A new

infestation of D. longipennis extending over about 6 sections was located in El Paso County near the Lincoln County line. These grasshoppers are about 15 percent fifth instar and occur in numbers ranging from 4 to 25 per square yard.

Nevada. (June 9-15): Ninety percent of M. mexicanus and 80 percent of M. bivittatus in the State are now in the adult stage. A few M. mexicanus and many M. occidentalis were mating in Lyon and Washoe Counties on June 7. General flights of M. mexicanus and M. bivittatus were observed in the Smith Valley area in Lyon County.

Texas. (June 9-15): The infestation in northern Texas Panhandle counties is still heavy, although the total population of M. mexicanus in the migratory area has been reduced considerably. (June 16-22): About 85 to 90 percent of the grasshoppers in the migratory counties of Dallam, Sherman, Hartley, and Moore have reached the adult stage. M. mexicanus is the dominant species. Flights of this species were observed daily during the week in Dallam County. D. longipennis now comprises only a very small percentage of the grasshoppers occurring in Dallam and Hartley Counties.

Oklahoma. C. F. Stiles (June 26): Population throughout the eastern two-thirds of the State is light; believed to be below normal. A few local outbreaks have occurred in McCurtain County. In southwestern Oklahoma a few local outbreaks have occurred in Jefferson, Harmon, Kiowa, Greer, and Roger Mills Counties. Infestation remains very heavy in Cimarron County, where hoppers have been reported as numerous as 125 to 175 per square yard, most of them being M. mexicanus. Infestation decreases coming eastward through Texas and Beaver Counties. Harper County reports some infestation, mostly A. turnbullii. (June 2-8): In Texas and Cimarron Counties from 40 to 50 percent of the M. mexicanus are in the fifth instar, while 60 percent of A. turnbullii and A. ellioti are in the fifth instar. A heavy infestation of A. turnbullii was reported in Beaver County, with an average of 30 hoppers per square yard along field margins. The heaviest infestations in southwestern Oklahoma are reported to occur in Beckham, Kiowa, and Greer Counties. (June 9-15): M. mexicanus is reported to be the dominant species in the western half of Texas County. In the eastern part of the county crop hoppers are most numerous. In both Texas and Cimarron Counties 70 percent of A. turnbullii is reported to be fifth instar. (June 16 to 22): Flights of M. mexicanus were observed daily in Cimarron County. Brachystola magna Gir. is rather numerous over the southwestern part of the State and is scattered throughout the cotton-fields.

Kansas. (June 9-15): Most grasshoppers, mainly A. turnbullii, are now adults in most of the infested counties of the State. In Rush and Thomas Counties M. mexicanus constitute more than half of the hopper infestation. Many of these are adult. Migrations have been observed in Finney County where one band was about  $\frac{1}{2}$  mile wide and averaged about 25 hoppers per square yard. Another in the same county was about



3 miles wide and had about 15 hoppers per square yard; still another was observed in Seward County. First copulation of A. turnbullii was observed in Clark County on June 5, and half-developed eggs are now to be found in some females. (June 16 to 22): Most of the M. differentialis are in the third, fourth, and fifth instars.

Nebraska. (June 2-8): Gravid females of A. turnbullii and M. confusus were reported as present in the Republican Valley on June 6. The degree of hatch is as follows: M. confusus, 98 to 100 percent; M. mexicanus, 95 to 98 percent; M. bivittatus, 90 to 98 percent; M. differentialis, 40 to 75 percent; and A. turnbullii, 90 percent. Very little population dispersion has occurred to date, and damage has been confined to weeds along roadsides and field margins. Only a slight amount of small grain and other crop damage has been recorded and amounts to less than 1 percent. The first adults of M. packardii were observed on June 14 in the Republican River Valley east of Benkelman. M. confusus was first observed mating near Websterville, in Custer County, on June 10. (June 16-22): In the northeastern part of the State, M. bivittatus is the dominant species with M. differentialis being almost as numerous. The hatch of both these species is complete except in the eastern Missouri River Counties where a few M. differentialis remain to hatch. Approximately 2 percent of the M. bivittatus are now adult. In western Nebraska, M. packardii in the fourth instar is the dominant species. M. bivittatus and M. mexicanus are principally in the third and fourth instars with a few of the latter being adult. M. confusus is adult in all portions of the State. Little movement into fields has been noted and crop damage has not been extensive in any area.

Missouri. (June 16 to 22): Only a few first and second instar nymphs of M. bivittatus, M. mexicanus, and M. differentialis have been reported in the State. Populations approaching 50 per square yard have been observed on field borders. Injury has been limited to barley, garden crops, and red clover.

Iowa. (June 2-8): Heavy rains during the last week in the western part of the State are reported to have reduced populations slightly in a few areas. In the northwestern border counties the hatch of M. bivittatus is about 70-percent complete, and marginal populations average from 100 to 150 per square yard. Sioux and Plymouth Counties are the most seriously infested. (June 9-15): M. bivittatus and M. mexicanus have nearly completed hatching in the northwestern part of the State. The early instars of M. differentialis have been noticed in much of this area. There has been a rapid increase in populations, owing to warm weather.

Wyoming. (June 2-8): Hatching of M. mexicanus, M. bivittatus, and M. packardii is reported to be practically complete in Goshen, Platte, and Laramie Counties. No heavy infestations are reported in the above counties, while in Crook, Weston, and Campbell Counties, the infestations are reported to be even lighter. Hatching of M. differentialis and M. femur-rubrum is expected to be completed within the next week. M. confusus adults are reported. (June 9-15): Hot weather during the week has been responsible



for the completion of hatching, with the possible exception of M. femur-rubrum. Adult M. confusus are common and a few adult M. bivittatus have been observed. About 50 percent of the M. bivittatus and M. packardii are in the fourth and fifth instars. In the irrigated areas these two species predominate, only a few M. mexicanus having been observed. Infestations on range and idle land in Goshen and Campbell Counties were found to be composed of a mixture of different species with practically no M. mexicanus present. The severest general infestation is in Sheridan County, where grasshoppers are present in numbers sufficient to do damage in practically all parts of the county.

Utah. (June 2-8): Hatching was about 80 percent complete in most of the infested areas of the State, but at some of the higher elevations the hatch is just beginning. The dominant species, M. mexicanus, is predominantly in the first and second instars; however, there is a very wide range of development in the various areas of the State. Fifty percent of M. differentialis and M. bivittatus are in the third instar. Harvesting operations and rapid drying of idle and weedy areas are causing a general movement into field margins, and severe marginal damage is now occurring in some alfalfa fields. Weather conditions during the last few weeks have been favorable for rapid development. In infested localities, populations average approximately 20 per square yard in fields and 100 per square yard along field margins.

G. F. Knowlton and F. C. Harmston (May 31): Heavy infestation of warrior grasshoppers (C. pellucida) is developing in the Hayden area of the Uintah Basin.

Montana. (June 2-8): Hatch of M. mexicanus in north-central Montana is complete in many areas, with first to third instars reported in Fergus and Chouteau Counties. Adult M. confusus appeared during the week in Fergus County. Some minor migrations took place during the week, but cool weather has prevented any heavy movement. (June 9-15): M. mexicanus constitutes about 98 percent of the infestation in Hill County. A few M. bivittatus and miscellaneous range species have been noted. In Toole, Chouteau, Judith Basin, and in parts of Cascade, Teton, Liberty, and Hill Counties the hatch is completed. (June 16 to 22): Adult M. mexicanus have been observed in Fergus, Cascade, Chouteau, Pondera, and Hill Counties and 75 percent are recorded as being in the fifth instar. The northeastern counties of Dawson, McCone, Richland, Roosevelt, Sheridan, and Daniels have very light infestations, the heaviest being in Richland where 15 grasshoppers to the square yard were found. It is reported that the hatch is complete in this latter section. In Liberty County, about 50 percent of the M. mexicanus are now in the fourth instar.

South Dakota. (June 2-8): M. differentialis reported to be hatching rapidly in the eastern part of the State. The hatch of M. bivittatus and M. mexicanus in the same section of the State was reported to be almost complete. In the Black Hills area, in the western part of the State, infestations remain spotted, M. mexicanus representing about 85 percent of the total populations. The hatch is practically completed in this area. M. confusus adults are common and M. differentialis is in the

first and second instars. No movements of any significance are reported, and crop damage to date has been very light. (June 9-15): In the counties south of Huron, namely, Sanborn, Aurora, Charles Mix, Gregory, and the Rosebud area, there are extremely heavy infestations along the margins and roadsides. North of Huron, populations range from 25 to several hundred per square yard on the margins and from 5 to 100 per square yard in the fields; however, the infestations are spotted in these northern areas. In most instances the infestations are composed largely of M. mexicanus and M. confusus. These species are in the second to fourth instars, and a few are adults. In Spink County from 22 to 60 percent of the total hoppers were adults. (June 16-22): In the south central counties of the State, M. bivittatus is the dominant species followed by M. differentialis, M. mexicanus, and M. confusus. M. bivittatus, M. mexicanus, and M. confusus are in the fifth instar and adult stages, with all of the latter species being adult. No heavy infestations are reported but many are threatening. M. mexicanus occurs in small, scattered, threatening infestations in the western part of the State. M. bivittatus is also the dominant species in the eastern part except that in Clay and Union Counties, M. differentialis is more numerous. M. mexicanus is third in numbers in this area. Infestations are not severe. M. mexicanus and M. bivittatus ranging from the first instar to the adult stage are the important species in the northeastern part of the State. Hatching is nearly complete and infestations are not at present severe. The same species, M. bivittatus, M. mexicanus, M. differentialis, and M. confusus, with the addition of M. packardii are the important species in the central part of the State, and in a few of the southern counties. Some M. mexicanus and M. bivittatus are now adult as are all of the M. confusus. It is reported that a severe infestation is located in Sully County. In the north, M. mexicanus are about 90 percent adult, M. differentialis 60 percent second instar, and M. bivittatus 50 percent fourth instar and 2 percent adult. B. magna constitutes 10 percent of the infestation in Corson County. The infestation is spotted, with severe spots being found in several counties. Considerable movement of the M. mexicanus has been noted on hot days.

North Dakota. F. G. Butcher (June 25): Beginning to cause marginal crop damage and much alarm throughout much of the northeastern quarter of the State. M. mexicanus is the predominant species, with M. bivittatus, M. packardii, M. differentialis, and C. pellucida as other important species. Hatching not complete but ranges from 90 to 100 percent in the southern half of the State and from 60 to 80 percent in the northern half. (June 16 to 22): Serious infestations have developed in Pembina, Walsh, Ramsay, and Nelson Counties. The hatching is about 90 percent complete in the southern portion of this area and about 75 percent complete in the central and northern parts. Eggs yet to hatch are those of M. differentialis, Melanoplus angustipennis Dodge, M. femur-rubrum, and D. carolina L. M. mexicanus and M. bivittatus are in the fourth instar. About 50 percent of the M. confusus are adult in the Sheldon area. In the remainder of the State M. mexicanus, M. bivittatus, and M. packardii, ranging from the first to the fifth instars, are the important species. Infestations are somewhat spotted in most areas.



Minnesota. (June 9-15): The hatch of M. mexicanus, M. bivittatus, and M. femur-rubrum is reported to be from 50- to 90-percent completed for the first two species, and about 5-percent completed for M. femur-rubrum. The hatch of C. pellucida is reported to be about 50-percent completed. In most counties M. femur-rubrum is the dominant species. (June 16-22): M. mexicanus and M. bivittatus have nearly completed hatching in Kittson County. The latter species comprises about 70 percent of the infestation and the majority of specimens are now in the fourth instar with the last instar of M. bivittatus becoming common. In Polk County, M. bivittatus, M. mexicanus, M. femur-rubrum, C. pellucida, and Melanoplus packardii are the dominant species. C. pellucida are found in the second and third instar while the remaining species are mostly in the third and fourth. In the eastern four-fifths of this county, the hatch is about 60 percent complete. About 70 percent of the grasshoppers present in Marshall County are M. bivittatus; M. mexicanus comprises about 20 percent of the infestation. The hatch is 90 to 95 percent complete. The majority of the nymphs are in the third and fourth instars with the last instar of M. bivittatus becoming quite common. Throughout the remaining areas in the infested counties in Minnesota, the hatch varies from 20 to 80 or 90 percent complete. In most of these areas first and second instar M. differentialis comprises the vast majority of the grasshoppers present.

Wisconsin. (June 9-15): Populations of M. bivittatus ranged from 15 to 35 per square yard in the infested counties in the State and are in the first, second, and third instars. (June 16-22): No general hatch has occurred as yet in the State. Most of the hoppers present are in a sandy area south of Wausau in Marathon County. Grasshoppers were found here to run as high as 60 to the square yard. M. bivittatus and M. femur-rubrum are the only two species reported. Only about half of the grasshoppers have hatched.

Michigan. R. Hutson (June 22): M. mexicanus was about 85- to 90-percent hatched in Isabella, Clare, Iosco, Alcona, Alpena, Montmorency, and Oscoda Counties this week. From 10 to 15 percent were in the first instar, from 50 to 75 percent in second instar, and about 10 to 20 percent were in the third instar. C. pellucida was found to be practically 100-percent hatched wherever found, being mostly in the first and second instars. All other species were in about the same range of hatching development. Small numbers of Ageneotettix deorum Scudd. occurred on some sites. (June 16-22): M. mexicanus constitutes about 65 to 85 percent of the grasshopper populations in the infested counties. A. deorum is present in all counties except Iosco, Alcona, and Alpena. In the latter county, only M. mexicanus is reported. In Iosco and Alcona Counties, C. pellucida is to be found.

Illinois. W. P. Flint (June 19): Relatively scarce. No damage reported from any section of the State.

MORMON CRICKET (Anabrus simplex Hald.)

General. C. Wakeland (June 18): No infestations have developed in the Big Horn National Forest of Sheridan County, Wyo., from very heavy depositions of eggs in higher elevations, and it appears that there will be few crickets migrating from there to crop areas. The large bands of crickets in Big Horn and Yellowstone Counties, Mont., are in higher elevations remote from crop areas, where succulent vegetation is so abundant that little injury is apparent, and no extensive migration to crop areas is expected. Crickets now largely in the adult stage, and, if they react as in previous years, their tendency will be to migrate higher rather than toward crops. Some migration reported as taking place in western Idaho from higher elevations to the crop lands, but crop protection has been so effective that it is expected that injury will be prevented, even if migration takes place. Reports from eastern Idaho indicate that control has been very successful.

South Dakota. (June 9-15): Infestation in the Rosebud area, in Jones and Lyman Counties, and in northwestern and central Mellette and Lyman Counties and in western Jones County reported as heavy. In some of the areas crickets were found at the rate of from 50 to 100 per square yard. Bands have been found which are from 1 to  $1\frac{1}{2}$  miles wide and 5 miles long.

Montana. (June 9-15): Only a few migrations reported. In most sections the crickets range from third instar to adult stage. In the Sanders County area eggs are still in the early stage of development, yet crickets are in the adult stage and some mating has taken place.

Wyoming. (June 9-15): A small amount of crop damage, confined largely to grain, has been noticed, but it appears that damage will be comparatively light. Crickets are in the adult stage at the lower elevations in Hot Springs County, whereas on the higher slopes of the Owl Creek Range they are largely in the sixth and seventh instars. In the Big Horn Mountains of Sheridan County there are still numerous unhatched eggs. In Crook County crickets range from the third to the sixth instars, with unhatched eggs present at the higher elevations.

Nevada. (June 9-15): Rather serious migrations into crop areas have occurred at South Fork, and minor damage has been done to cultivated crops. Movements of crickets are rather general throughout the infested areas in the State. The greater number of the crickets are now adult, and copulation was noted on June 13 in areas south of Elko. On June 15 crickets were practically continuous for  $3\frac{1}{4}$  miles south of Elko.

Idaho. (June 2-8): Mormon crickets throughout the infested eastern part of the State are mostly in the adult stage at the lower elevations, while in the higher regions they are in third to fifth instars. Gravid females were reported on June 8 in Madison County.



Idaho. (June 9-15): Migrations are taking place in Washington, Adams, Owyhee, Elmore, Fremont, and Clark Counties. Most of the crickets are now adult. Copulation has been observed in nearly all counties, and females are nearly ready to begin ovipositing.

Utah. (June 2-8): Mormon crickets in large numbers are now migrating from higher elevations toward crop areas in all infested areas in the State. Approximately 90 percent of the crickets are in the adult stage. Mating first reported on June 3, but oviposition has not been observed. Several flocks of from 5,000 to 6,000 sea gulls per flock were reported feeding on crickets in various infested areas. (June 9-15): Crickets are beginning to oviposit in Tooele County.

Oregon. (June 9-15): Crickets in Wasco, Baker, and Jefferson Counties are now adult, and egg deposition has begun.

Washington. L. G. Smith (June 5): Approximately 95 percent of the Mormon crickets in Franklin County on May 25 were in the adult stage, the rest being in the sixth and seventh instars. Population ranged from 16 to 38 per square yard. Migrations occurred only in the early hours of the morning, and feeding was observed on sunflowers, greasewood, and pigweed. Little or no damage had been done to wheat and rye.

#### CUTWORMS (Noctuidae)

Ohio. E. W. Mendenhall (June 6): Garden cutworms (Peridroma margaritosa Haw.) were very abundant in central Ohio on beans and other garden vegetables, doing considerable damage to early planted gardens.

Indiana. J. J. Davis (June 22): Common in many areas, but perhaps the major species is the so-called overflow worm (Agrotis ypsilon Rott.), which has been responsible for much damage to corn. Other damage has been done to tomato and garden crops in general.

Minnesota. A. G. Ruggles and assistants (June): Nephelodes emmedonia Cram. moderately abundant in fields of hay and on foliage of trees at Perham and Preston.

North Dakota. F. G. Butcher (June 25): Underground-feeding by the pale western cutworm (A. orthogonia Morr.) appears much less abundant than usual.

Nebraska. H. D. Tate (June 18): Extensive damage reported to corn on irrigated land on June 3 from Valley County. Specimen of western army cutworm moth (Chorazagrotis auxiliaris Grote) received on June 12 from Douglas County with a request for control information.

New Mexico. J. R. Eyer (June 8): Outbreak of the pale western cutworm



reported in the northeastern counties of Quay and Union. Particularly injurious to wheat.

California. S. Lockwood (June 10): During the month the variegated cutworm was responsible for rather heavy losses in the Half Moon Bay area to vetch planted for seed production.

C. C. Wilson (June 11): P. margaritosa attacked approximately 1,000 acres of mustard and a number of fields of sugar beets and tomatoes in Santa Barbara and San Luis Obispo Counties early in May. Infestation was general, though damage was confined largely to mustard, and ranged from 10 to 90 percent. Examination of soil indicated an average of 8 pupae per square yard, 50 percent of which were attacked by parasites. Larvae were being attacked by predators and a fungous disease.

ARMYWORM (Cirphis unipuncta Haw.)

Connecticut. A. W. Morrill, Jr. (June 20): Collected in great numbers on a field of sun-grown tobacco in East Windsor.

New York. L. A. Carruth (June 24): Larvae found causing slight injury to young sweet corn plants in Nassau County, Long Island.

Minnesota. A. E. Pritchard (June 26): On June 22 a very heavy flight of moths was observed in southern Clay County, especially in the area between Barnesville, Downer, and Sabin. No flight observed near Moorhead on June 23, and only a few moths observed on June 24 in southern Wilkin County. On June 25 only a few moths were observed in Breckenridge.

North Dakota. F. G. Butcher (June 25): Recent flight of moths suggests possibility that armyworms will be abundant.

Nebraska. H. D. Tate (June 18): Specimens sent from Franklin County on June 12.

FALL ARMYWORM (Laphygma frugiperda A. & S.)

New York. L. A. Carruth (June 24): Found on Long Island on June 18. Second- or third-instar larvae were feeding in early sweet corn fields, located reasonably close to fields that suffered severe injury in 1939. Because of the early date and the heavy infestations of last year, the possibility that this insect overwintered on Long Island must be seriously considered.

Mississippi. C. Lyle and assistants (June 25): Reported as causing light damage to corn in Monroe and Lee Counties, and as present in a light infestation in the Meridian area.

BEET WEBWORM (Loxostege sticticalis L.)

North Dakota. F. G. Butcher (June 25): Very abundant the last 2 weeks. Indications are that large numbers of larval forms may soon be anticipated.

Utah. G. F. Knowlton (June 7): Moths moderately abundant at lights at Vernal. Less abundant in light-trap catches at Logan than during the same time in 1939.

Washington. D. D. Jackson (June 12): Reported as attacking truck crops, sweetclover, and peas with severe damage in some localities. Larvae eating large quantities at present.

GARDEN WEBWORM (Loxostege similalis Guen.)

Texas. A. Kagan (June 8): Larvae collected on June 5 on cotton at Waco. (Det. by C. Heinrich.)

MAY BEETLES (Phyllophaga spp.)

New York. N. Y. State Coll. Agr. News Letter (June 3): Extensive flights already seen in Clinton, Erie, Essex, Oswego, Jefferson, Lewis, Schuyler, Wayne, Monroe, Steuben, Tompkins, Cortland, and Ulster Counties.

Pennsylvania. A. B. Champlain (June 11): P. tristis F. reported in swarms on chestnut oak at Kutztown in eastern Pennsylvania.

Ohio. T. H. Parks (June 18): Heavy defoliation of oaks has occurred throughout central and eastern Ohio. Oaks standing in or joining blue-grass pastures are most seriously injured. Beetles disappeared about June 15.

Michigan. R. Hutson (June 22): White grubs in strawberries reported from Montrose, Detroit, and Flint, and in corn from Caledonia.

Wisconsin. T. R. Chamberlin, et al. (May): Adults of the "C" brood in southern Wisconsin are most abundant in Iowa, Lafayette, and the eastern part of Grant Counties, with some overlapping in nearby areas. In this flight P. hirticula Knoch has been the predominant species. Study of the beetle flight has been handicapped this season, however, by frequent heavy rains, most of which have been followed by cool weather. For this reason P. fusca Froel., which emerges earlier in the season and at lower temperatures than P. hirticula, has been more numerous in most of the collection, despite the fact that P. hirticula is known to be much more abundant in the soil. Apparently, therefore, the period of maximum flight has not yet arrived.

Minnesota. A. A. Granovsky (June 13): White grubs moderately abundant in Saint Paul. Damage done by "A" brood in last year of growth. June beetles in "C" brood rather abundant.

Kansas. H. R. Bryson (June 25): Considerable injury to strawberry beds and lawns generally. Adults of P. submucida Lec. abundant at Manhattan. P. lanceolata Say is more abundant than last year, but not nearly so abundant as in 1938.

Oklahoma. R. G. Dahms (June 24): Adults of P. lanceolata and P. cribrata Lec. caused serious injury to some cottonfields in Cotton and Comanche Counties during first 10 days of June.

ROSE CHAFER (Macrodactylus subspinosus F.)

Massachusetts. A. I. Bourne (June 20): First noticed on June 12-14. Not very abundant, though several reports of serious damage have been received.

Connecticut. E. P. Felt (June 25): Has appeared in small numbers in southwestern Connecticut.

New York. R. E. Horsey (June): Reported as abundant on trees and shrubs in Greece, north of Rochester, on June 18; also found on roses and peonies but not common; little damage in the southern part of Rochester on June 18.

E. P. Felt (June 25): Appeared in small numbers in southeastern New York.

N. Y. State Coll. Agr. News Letter (June 24): Reported as giving usual severe trouble on sandy soil in Monroe County, western New York. Have increased in numbers this week over last and have attacked everything from strawberries and potatoes to peaches and apples in Wayne County.

Maryland. F. F. Smith (June 21): Very abundant on roses near Silver Spring. Only a few adults remaining by June 20. White and pink varieties more severely injured than dark red.

District of Columbia. H. Sollers (June 24): Found in rose buds on June 22 in the northwestern part of Washington.

Ohio. J. S. Houser (June): Unusually prevalent in Ohio. Complaints of general feeding in fruits, ornamental flowers, and foliage of trees are common. Significant damage to peach reported.

Indiana. J. J. Davis (June 22): Reported from the northern tier of counties. Crops reported as attacked included rose and other flowers, grape, raspberry, and garden vegetables. First report received on June 15.



Michigan. R. Hutson (June 22): Common throughout the lower half of the State. Particularly destructive to grapes, peaches, roses, and peonies.

Tennessee. G. M. Bentley (June 24): Causing damage to fruit on plum trees at Crossville, Cumberland County, on June 21.

JAPANESE BEETLE (Popillia japonica Newm.)

Connecticut. J. P. Johnson (June 19): Pupae found in the soil for first time on June 18.

New York. N. Y. State Coll. Agr. News Letter (June 3): Examination of 50 different areas, where several square feet of turf were examined, showed 103 larvae per square foot, averaging 78 per square foot, in Westchester County.

Delaware. L. A. Stearns (June 17): First adults observed today at Newark.

District of Columbia. H. Sollers (June 26): Found in rose buds, on althea bushes, and on pussy willow in northwestern Washington. Twenty-five adults found in one yard in the last 2 days.

Virginia. H. G. Walker and L. D. Anderson (June 24): First adult caught in traps at Norfolk on June 13. A total of 195 beetles had been caught in 24 yellow traps by June 23, as compared with a catch of 91 beetles in the old-style, green- and aluminum-painted traps on the same date last year. More abundant in the Norfolk area this year.

ASIATIC GARDEN BEETLE (Autorhiza castanea Arrow)

District of Columbia. Isabelle Smith (June 24): Found in garden in northwest section of Washington. Injury first noticed on rose foliage.

SUGARCANE BEETLE (Eutheola rugiceps Lec.)

Virginia. C. R. Willey (June): Reported as doing considerable damage on June 18 in a cornfield at Bowlers Wharf.

Mississippi. C. Lyle (June 25): Specimens received from Lowndes County, where they were feeding on corn; also damaging corn in Holmes County and in the Durant area.

Louisiana. M. T. Young (May 23): Injury on rice reported as normal. One fairly heavy infestation found at Franklin.

CARROT BEETLE (Ligyrus gilbosus Deg.)

Illinois. W. P. Flint (June 19): Unusually heavy flight in central Illinois.

Kansas. H. R. Bryson (June 25): More abundant than for the last two years.

A SCARABAEID (Aphodius sp.)

Louisiana. T. E. Snyder (June 18): Unusually large flight of small, black beetles present over an area  $\frac{1}{2}$  mile in extent near New Orleans. Weather is hot and damp.

A WEEVIL (Calomycterus setarius Roelofs)

Maryland. E. N. Cory (June 17): Began to emerge on June 14 at Towson.

IMBRICATED SNOOT BEETLE (Epicaerus imbricatus Say)

Indiana. J. J. Davis (June 3): Reported on May 31 from Floyd County, in the extreme southern part of the State, as destroying many new strawberry plantings.

Alabama. J. M. Robinson (June 13): Reported on beans and onions at Oneonta on May 15.

Nebraska. H. D. Tate (June 18): Present in abundance in Nemaha County.

WIREWORMS (Elateridae)

Maine. J. H. Hawkins (June 12): Adults of Cryptohypnus abbreviatus Say cluster around the base of cucumber plants at Monmouth and destroy the stem at or near the surface. (June 17): Adults of Agriotes mancus Say were taken at clover baits, beginning on June 15. Larvae attacking corn and potatoes throughout central Maine..

Connecticut. A. W. Morrill, Jr. (June 22): Wireworms, chiefly Limoni  
agonus Say, have caused considerable resetting in numbers of fields of shade-grown tobacco. Damage less abundant because of weather conditions.

New York. N. Y. State Coll. Agr. News Letter (June 10): What were believed to be eastern field and corn wireworms were found in separate fields in Wayne County, rather severely infesting cabbage plants. In Monroe County, the eastern field wireworm has been found damaging some plantings of early cabbage. Few cases of serious injury to tomatoes observed. (June 17): Reported as causing severe injury to onions in new muck in Genesee County. Rather serious on corn in Orleans County.

Alabama. J. M. Robinson (June 5): Specimens of larvae (Conoderus sp., probably C. auritus Hbst.) found attacking peanut roots at Enterprise. (Det. by W. H. Anderson.)

Mississippi. C. Lyle (June 25): Specimen of sand wireworm (Horistonotus uhlerii Horn) received from Smith and Jefferson Davis Counties, where corn was seriously injured.

Ohio. T. H. Parks (June 20): Field of corn in Brown County, southwestern Ohio, reported as being badly infested.



- Indiana. J. J. Davis (June 22): Serious losses to corn and tomatoes in Johnson County, central Indiana. Many tobacco plantings in Switzerland County, southeastern corner of Indiana, destroyed. Reported as destroying 5,000 plants in a field containing 9,000 plants.
- Wisconsin. C. L. Fluke (June 21): Reported as causing severe damage to young corn in Chippewa and Crawford Counties.
- Minnesota. A. G. Ruggles and assistants (June): Reported as moderately abundant in Saint Paul and infesting corn, especially.
- Iowa. H. E. Jaques (June): Reported as abundant and scattered throughout the entire State.
- North Dakota. F. G. Butcher (June 25): Considerable injury to cereals during recent weeks. Reports of major injury have been received from northwestern and eastern areas of the State, especially in the vicinity of Minot, in Ward County, and Finley, in Steele County, where adults are rather abundant.
- Nebraska. H. D. Tate (June 18): Numerous complaints of damage to corn received during period May 16 to June 15. Melanotus cribulosus Lec. found attacking corn in Washington, Nemaha, and Sarpy Counties on May 16, May 27, and June 15, respectively. M. pilosus Blatch. .also found in Nemaha County, while on May 20 a report of damage to corn by M. fissilis Say was received from Dakota County. Reports on May 25 from Washington County and on June 13 from Gage County of damage to corn by Aeolus dorsalis Say.
- Idaho. F. H. Shirck (June 5): L. californicus Mann. very active at Parma during the last of May and the early part of June. Sugar beets, corn, and seed lettuce plantings most seriously affected.
- Utah. G. F. Knowlton (June 22): Reported as damaging sugar beets in a field at Bear River City.

SAY'S STINKBUG (Chlorochroa sayi Stal)

- New Mexico. J. R. Eyer (June 8): Becoming abundant and increasingly injurious in the southwestern counties, particularly in Dona Ana, Hidalgo, and Luna. Reported as extremely abundant in fields of seed beets, oats, barley, and wheat. Adults are mating and just beginning to lay eggs.

CEREAL AND FORAGE - CROP INSECTS

CORN

CHINCH BUG (Blissus leucopterus Say)

Ohio. T. H. Parks (June 25): Chinch bugs were difficult to find in most fields in central and western Ohio, but a few adults and first- and second-instar nymphs were observed this week in wheat at Van Wert and Columbus. No serious damage is expected.

Indiana. C. Benton (June 17): Except for a slight drop from a general average of 9 to 7 per foot of drill row, in La Fayette, the adult population in winter wheat remains similar to the last 2 weeks, although the general stand of wheat and weedy undergrowth has become more rank during this period. First-brood nymphs were showing rapid increase. Many of the heavily infested thin spots in wheat show an average of 25 or more, and in spots even 50 or more, nymphs per foot of drill row. Over 95 percent of these are first-instar nymphs. First-instar nymphs were first observed on June 14, and a few third-instar nymphs were found today. Many adults are moving to adjacent corn, as high as 12 or more being found per hill of corn. Oats in this locality still show a trace of infestation.

J. J. Davis (June 22): Bugs overwintered in threatening numbers; however, rank growth of wheat, resulting in dense shade, has been unfavorable and many of the adults left the dense wheat to go over to corn, where they have laid eggs and where first-instar nymphs occur.

Illinois. W. P. Flint (June 19): Heavy rains during May have considerably reduced the population all over the State. There are still some spotted fields where damage may occur. It is estimated that the population has been reduced from about 60 to 75 percent. Owing to frequent rains, many bugs left wheat and went into corn when it first came up. In most instances the corn had sufficient moisture to outgrow any damage.

Iowa. H. E. Jaques (June): Abundant in the southern counties of the State.

Nebraska. H. D. Tate (June 18): Inquiries concerning methods of controlling chinch bugs were received during the period May 31 to June 15 from Richardson, Otoe, and Cass Counties. A report on June 14 indicated that newly hatched bugs were destroying corn in Cass County.

Kansas. H. R. Bryson (June 25): More abundant and causing injury over a much larger area than last year. Barley fields, and fields where chess or cheat occurs, are heavily infested. Reported as migrating into corn and sorghums from pastures in which little barley is prevalent. Winter wheat closely pastured late this spring furnished a considerable migration into adjoining cultivated crops. Very few of first generation nymphs have reached the adult stage. First adult observed at Manhattan



today. Majority are in the third and fourth instars with a considerable number of second instar still present. This situation has forced the nymphs to migrate as the small grains are being harvested. Some injury still resulting from concentrations of overwintered adults on small sorghum plants.

Arkansas. D. Isely (June 19): More important than usual in counties in the northeastern delta of the State, ranging from near the Arkansas River on the south and northward to the Missouri State line. Injury was not severe, but the bugs may be found in nearly all cornfields in this part of the State.

Oklahoma. C. F. Stiles (June 26): Unusually abundant throughout the northeastern part of the State despite the heavy rains. The counties most heavily infested are Okmulgee, Creek, Rogers, Muskogee, Nowata, Craig, Ottawa, Mayes, and Wagoner.

R. G. Dahms (June 24): Owing to weather conditions, the bugs are about 10 days later in development than is normal. First-generation adults were first observed on June 5 and eggs from these were found on June 18. Adults have been flying from small-grain fields to corn and sorghums since about June 10, and this migration is almost complete. Infestation is spotted in southwestern Oklahoma and only local injury is expected.

F. A. Fenton (June 24): Migration began in the vicinity of Stillwater during the last week in May, and is continuing at present. Most of the insects are in the fourth or fifth instar and a small proportion have reached the adult stage.

CORN EAR WORM (Heliothis armigera Hbn.)

Georgia. T. L. Bissell (June 22): In Griffin the larvae are half to full grown and are destroying corn tassels before they open. Eggs are abundant on silks.

Mississippi. C. Lyle (June 25): Reports indicate that corn has been attacked in the southern part of the State.

Kansas. H. R. Bryson (June 25): Eggs are abundant on the silks of early sweet corn. Larvae have caused some injury to the curl.

Texas. K. P. Ewing, et al. (June 8): In examining 1,000 silks in 10 upland fields in McLennan County, eggs were found to range from 13 to 118 per 100 silks, averaging 47.2 eggs per 100 silks. Larvae were found feeding in tips of silking ears at the rate of from 1 to 4 per 100 plants, averaging 1.8 per 100 ears. (June 22): In examining 500 ears of corn in bottom fields, 370 were found injured. Injury ranged from 64 to 95 per 100 ears, averaging 74. In examining 500 ears in upland fields, injury was found to range from 73 to 97 per 100 ears, averaging 82. At Riesel,

1,800 ears of corn were examined, revealing an average of 1.22 emergence holes per 100 ears. Nearly all of the ears were infested, but emergence has not taken place.

Utah. G. F. Knowlton and D. L. Sargent (May 23): A second moth was collected in a trap light at Cedar City today.

STALK BORER (Papaipema nebris nitela Guen.)

Maine. J. H. Hawkins (June 15): Sweet corn was generally affected in gardens at Orono and in the canning areas.

Georgia. H. O. Lund (June 12): Reported that 10 to 15 percent of the stalks were injured in a 100-acre cornfield at Buchanan, Haralson County.

EUROPEAN CORN BORER (Pyrausta nubilalis Hbn.)

Massachusetts. A. I. Bourne (June 20): First moth was noticed about June 4 to 5, considerably later than usual. Emergence of the moths is taking place considerably earlier than usual in relation to the development of corn.

Connecticut. N. Turner (June 20): The first eggs were found at Mount Carmel, in the southern part of the State, on June 4, about a week later than last year. Cool nights have reduced the number of eggs and delayed oviposition. A few fields of sweet corn have heavy infestations.

New York. N. Y. State Coll. Agr. News Letter (June 10): Several batches of eggs were found on June 7 in western Suffolk County, on plants about 8 inches high. Emergence is about 20 percent in Nassau County and nearly as high in Columbia and Rensselaer Counties. Egg masses are slow in appearing, owing to the backward season. (June 17): During the last week moth emergence has reached about 75 percent on Long Island, and in Columbia and Rensselaer Counties. Eggs have begun to hatch, although they are relatively scarce on Long Island. In Columbia County a number of early sweet corn fields average nearly an egg mass per plant. One field in Rensselaer County has about 3 per plant. In Dutchess County eggs were noted at Red Hook on June 14. Eggs were found in Ulster County on early corn in considerable numbers on June 13. (June 24): Moth emergence reached 90 percent during the last week in Nassau County, and nearly as high in the Hudson Valley; and in Rockland County the first borer was observed on June 17, though no extensive injury was found.

Virginia. H. G. Walker and L. D. Anderson (June 24): Appears to be more abundant in potatoes on the Eastern Shore and in Princess Anne County than it has ever been. Dissection of potato plants in a field near Pungo, Princess Anne County, on June 21 showed that 60 percent were in the larval stage; 38 percent were in the pupal stage; and 2 percent had emerged. In Princess Anne County, the infestation ranged from less than 5 percent to over 90 percent of the plants examined in different fields.



SEED-CORN BEETLE (Agonoderus lecontei Chaud.)

Indiana. J. J. Davis (June 8): Reported as feeding in planted corn seed in Lake County.

Wisconsin. C. L. Fluke (June 21): Now causing the most severe damage done in the State during the last 25 years. It has ruined entire fields in Waushara, Fond du Lac, and Wood Counties, and has done less damage in many fields throughout southern Wisconsin.

Iowa. H. E. Jaques (June): Noted in the west-central counties of Monona and Carroll.

Nebraska. H. D. Tate (June 18): Seed-corn beetles were attacking corn in Dakota, Washington, and Gage Counties, according to reports received on May 21, May 27, and June 14, respectively.

GRAPE COLASPIS (Colaspis brunnea F.)

Indiana. J. J. Davis (June 22): Grub injury to corn was first observed near Mitchell, and similar injury was reported as common in the vicinity. Reported since from many localities in the southern half of the State. First reports received on June 15. All infestations were in spring-plowed fields and, with few exceptions, following lespedeza. On June 17 it was reported from Jeffersonville that, in a cornfield planted a little later than other fields inspected, it was very easy to find from 1 to 3 grubs in almost every hill. This field was in lespedeza last year. This insect was observed to have destroyed considerable corn acreage, following timothy, at Ambia, in west-central Indiana.

Illinois. W. P. Flint (June 19): Serious damage from feeding of the larvae has occurred throughout central and northern Illinois. As is usually the case, the damage has been practically all on corn following legumes. In the south-central part of the State damage seems to be more severe to corn following lespedeza.

CORN BILLBUGS (Calendra spp.)

Kentucky. W. A. Price (June 27): A field of corn near Lexington was observed on June 13 to have 100-percent injury by C. destructor Chitt.

Minnesota. A. G. Ruggles and assistants (June): C. aequalis Gyll. was moderately abundant on corn at Saint Peter, Nicollet County, and in Yellow Medicine County.

Iowa. H. E. Jaques (June): Damage noted as scattered throughout the southern half of the State. Worth County, in the north, was infested.

Alabama. J. M. Robinson (June 13): Found on corn at Three Notch on May 16.



Mississippi. C. Lyle (June 25): C. callosa Oliv. was reported as having injured corn in Calhoun County early in June.

#### ALFALFA AND CLOVER

##### A WEEVIL (Sitona cylindricollis Fahraeus)

Illinois. W. P. Flint (June 19): Found in the State for the first time this year. It undoubtedly has been here for several years, as it is distributed throughout the northern counties and has caused serious damage to spring-seeded sweetclover, completely destroying some fields. Considerable damage was caused also to some old sweetclover plantings. Beetles were present in these fields by the thousands. (Det. by L. L. Buchanan.)

##### ALFALFA WEEVIL (Hypera postica Gyll.)

Utah. G. F. Knowlton (June 7): Owing to injury caused by this weevil, alfalfa was cut early in many parts of the State.

California. A. E. Michelbacher (June 22): The second brood in the San Joaquin Valley is beginning to make its appearance. On June 17 the number of larvae collected per 100 sweeps in the different fields ranged from 2 to 650. On the same date in the region adjacent to San Francisco Bay, the weevil was very scarce. The number of larvae collected in the different fields ranged from 1 to 7. Parasitization by Bathyplectes curculionis Thoms. was moderate in the San Joaquin Valley, but considerable in the region adjacent to San Francisco Bay.

##### CLOVER LEAF WEEVIL (Hypera punctata F.)

North Dakota. F. G. Butcher (June 25): Observed in typical feeding activities for the first time in the State. Injury to new seedlings and to older plantings was general throughout the northeastern areas. To date it has caused no concern to farm operators in the area.

Nebraska. J. C. Hamlin (June 4): Larva was collected at Omaha on May 23. (Det. by W. H. Anderson.)

##### CLOVER ROOT BORER (Hylastinus obscurus Marsham)

Idaho. J. R. Douglass (June 1): A serious pest of clover in south-central Idaho, and more complaints received of this insect than of any other during the present season. Field after field of clover grown for seed was plowed up and planted with other crops. On May 20 a large number of plants was examined and adults were present in every plant but one. All plants brought in by growers have been infested. (Det. by M. W. Blackman.)

ALFALFA BUTTERFLY (Colias eurytheme Bdv.)

California. A. E. Michelbacher (June 22): Larvae were collected in the San Joaquin Valley and ranged from 1 to 206 per 100 sweeps on June 1. In the region adjacent to the San Francisco Bay they ranged from 1 to 102. Parasitization by Apanteles flaviconchae Riley was small, although in several fields about 60 percent of the small larvae were parasitized.

ALFALFA LOOPER (Autographa californica Speyer)

Montana. H. B. Mills (June 25): Attacking alfalfa in Lake and Lewis and Clark Counties. Adults were abundant at light trap at Bozeman, Gallatin County. More abundant than average.

COWPEAS

COWPEA CURCULIO (Chalcodermus aeneus Boh.)

Georgia. T. L. Bissell (June 26): There were a few in evidence at Experiment, Central Georgia, on June 22, but plants are only half grown. At Tifton on June 24, adults were found puncturing pods, and a few were found with mature grubs in them. One curculio was found on pole beans, some pods being punctured.

VETCH

VETCH BRUCHID (Bruchus brachialis Fahraeus)

Connecticut. M. P. Zappe (June 20): Adults were present on flowering vetch at Wallingford and Hamden. The insect was not known to be present in this State until last year.

GRASS

MEADOW PLANT BUG (Miris dolabratus L.)

Maryland. T. L. Bissell (June 3): Noticed at College Park as abundant on grass. (Det. by P. Knight.)

FRUIT INSECTS

EASTERN TENT CATERPILLAR (Malacosoma americana F.)

- Vermont. J. V. Schaffner, Jr. (June 14): Hatching at Springfield began on April 29 on wild apple trees situated on a southeasterly slope in a rather protected spot.
- Connecticut. P. Wallace (June 10): Observed but not common throughout Litchfield, Hartford, Tolland, New Haven, Middlesex, and Fairfield Counties. More abundant in Fairfield County than elsewhere.
- New York. P. B. Dowden (June 14): Hatching just beginning at Pharsalia, Chenango County, on May 2.
- Delaware. L. A. Stearns (May 31): Nests just becoming noticeable on May 6; nests and damage conspicuous by May 24; larvae now mature and migrating.
- Ohio. T. H. Parks (June 20): Very abundant in the eastern counties during June.

SHOT-HOLE BORER (Scolytus rugulosus Ratz.)

- Connecticut. P. Wallace (June 6): Abundant in peach at Hamden. Fifty percent of adults and pupae parasitized and dead in cells.
- Texas. R. K. Fletcher (June 21): Found in peach on June 10 in Harris County.
- Washington. W. S. Gillard (June 5): Extensive injury to pear and apple in the Underwood locality, in Skamania County, on May 31. More abundant than heretofore.

WESTERN SPOTTED CUCUMBER BEETLE (Diabrotica soror Lec.)

- California. A. E. Michelbacher (June 22): Some damage to apricots. An average of 410 beetles taken from each tree in an orchard at Brentwood. In several orchards the count per tree was between 200 and 300.

A WEEVIL (Peritelinus oregonus Van D.)

- Oregon. S. M. Dohanian (May 18): About 10 percent of the trees in a young filbert orchard at Alvadore, Lane County (planted in February, 1940), were partially defoliated, and by actual count 3 percent were entirely defoliated. There were 2 foci in the 30-acre orchard in which the damage was serious. Near these centers as many as 38 weevils per tree were counted, and in a number of instances 8 to 11 weevils were found feeding on 1 leaf. Adults were seen feeding on 2 young walnuts planted in the filbert orchard, and on several prune trees in old orchards adjacent to the filbert plantation. (Det. by L. L. Buchanan.)



APPLE

CODLING MOTH (Carpocapsa pomonella L.)

New York. D. W. Hamilton (June 24): Adults began appearing in bait traps at Poughkeepsie, eastern New York, on May 26, but only a few taken before June 1. Total captures in 10 bait traps located in the same trees for the last 5 years are the heaviest on record, amounting to 2,210 moths. Peak captures occurred from June 3 to 14. First larval entrances in fruit found on June 11. Owing to ideal weather conditions and the heavy adult population, entrances have been unusually numerous in poorly treated orchards during the last 2 weeks, 420 entrances having been removed from one untreated tree near Poughkeepsie.

N. Y. State Coll. Agr. News Letter (June 10): In western New York first adults emerged from the cage at Lewiston, Niagara County, and at Sodus, Wayne County, on June 5. (June 24): Rapid emergence, and many eggs laid up to June 20 at Geneva. Cage records for western New York indicated that more than 50 percent of the moths had emerged in the earlier zones and approximately 20 percent in the Lake zone. Eggs laid very rapidly in Niagara County prior to the cold wave, and many entrances made. First entrances in Monroe County observed on June 17. In Wayne County moths stopped flight for 3 days, owing to cool weather.

Delaware. L. A. Stearns (June 19): Emergence of spring brood ended on about June 18; peak of flight on night of May 20; few entries by June 13, and most of these recent; infestation by first brood observed to be the lightest in 10 years.

Virginia. A. M. Woodside (June 24): Larvae began entering apples in Augusta County on about May 31. Emergence of adults in the insectary complete by June 17. Moths still being captured in bait traps. Entries of larvae into fruit apparently reached a peak on about June 15. (June 25): First-brood larvae beginning to leave apples in the vicinity of Staunton.

W. S. Hough (June 15): Hatching began about June 2 in the vicinity of Winchester, and entries have increased rapidly to date. Moth emergence and oviposition began considerably later than usual.

Ohio. T. H. Parks (June 20): Bait-pan catches started in earnest on June 1 and have been regular and high most of the time since then in the vicinity of Columbus. First larval entrances at Columbus noticed on June 10. There is a close parallel development of the insect in the central and northern counties. Indications are that numbers are above normal.

Indiana. L. F. Steiner (June 6): Bait-trap catches in 284 traps during the last week in the Vincennes area totaled approximately 3,979. Larvae entering fruit this week in relatively large numbers. (June 12): Emergence continued to fall off during the last week, and the numbers caught in traps were approximately two-thirds less than during the preceding week. Hatching has continued rapidly since June 3, with no

apparent let-up. No mature larvae observed. (June 20): Bait-trap catches in the Vincennes area have remained constant throughout the week, daily catches ranging from 125 to 150 moths for the 285 traps. Emergence has almost ceased, and hatch of larvae slowed up considerably. First mature larvae found about to leave apples on June 17, 9 days later than in 1939.

Michigan. R. Hutson (June 22): Emergence began at Mason on June 2.

Missouri and Kansas. H. Baker (June 24): Bait-trap catches of spring-brood moths heavy in northwestern Missouri and northeastern Kansas during the period May 27 to June 6 and reached their peak on June 2-3. Activity of first-brood larvae first observed on June 3. First mature larvae observed leaving fruit on June 21. Damage by first-brood larvae materially curtailed by cool, rainy weather and is less than expected.

Washington. W. S. Gillard (June 5): A few hot days brought on extensive moth activity in the Underwood area, Skamania County, 92 moths being taken from 1 trap in 1 night.

L. G. Smith (June 19): Still a large number of eggs, in various stages of development, on the fruit.

A MOTH (Conopia pyri Harr.)

Virginia. W. S. Hough (June 15): Being caught in relatively large numbers in bait pails in some orchards in the vicinity of Winchester.

FRUIT TREE LEAF ROLLER (Cacoecia argyrospila Walk.)

New York. N. Y. State Coll. Agr. News Letter (June 24): Considerable injury to fruit and foliage in the lower Hudson Valley and in the Lake district of western New York.

Indiana. S. A. Summerland (June 24): Adults caught in bait pails in the Vincennes area in large numbers since June 3. Catch in 132 traps during the last week totaled 3,429 moths.

Illinois. W. P. Flint (June 19): Feeding has ceased throughout the southern three-fourths of Illinois, and adults are now very abundant, several thousand being caught nightly in light traps at Urbana. Severe damage to orchards in western Illinois.

Nebraska. H. D. Tate (June 18): Found to be infesting an orchard in Brown County on May 25.

ROSE LEAF BEETLE (Nodonota puncticollis Say)

New York. N. Y. State Coll. Agr. News Letter (June 24): Considerable injury caused in the lower Hudson River Valley.



Virginia. W. S. Hough (June 15): Found in relatively large numbers in many localities in the Winchester area, and considerable damage has occurred on apples.

APPLE MAGGOT (Rhagoletis pomonella Walsh)

New York. N. Y. State Coll. Agr. News Letter (June 24): First fly of the season caught in an emergence trap at Poughkeepsie on June 20.

ROSY APPLE APHID (Anuraphis roseus Baker)

Massachusetts. A. I. Bourne (June 20): Reported as abundant throughout the eastern part of Plymouth County. Treated trees practically free.

Connecticut. P. Garman (June 21): Severe in most localities; abundant in a few orchards locally.

New York. N. Y. State Coll. Agr. News Letter (June 3): Found again in an orchard where they caused damage last year in Genesee County, western New York. (June 10): Increasing in untreated orchards but still not serious in Erie, Monroe, and Wayne Counties, western New York. (June 17): Rapidly becoming winged in Rockland County, eastern New York, and at least 50 to 60 percent of the fruits injured in one orchard on June 12. Found in scattered locations in Niagara County, but no commercial damage seen.

Delaware. L. A. Stearns (May 31): Infestation generally light.

Maryland. E. N. Cory (June 14): Considerable damage in Washington County.

Virginia. W. S. Hough (June 15): Third generation is causing severe damage in northern Virginia in untreated, as well as in improperly treated orchards. Relatively few aphids of any kind found on buds early in the spring, but natural enemies were not present in time to check the development of the aphid during the first and second generations.

Ohio. T. H. Parks (June 20): Colonies appeared in many apple orchards over Ohio early in June. Predators had taken control by the third week in June and few aphids were found on June 19.

Indiana. L. F. Steiner (June 12): About as abundant as a week ago in the Vincennes area, considerable damage occurring in some orchards.

Washington. Ortho News (May 27): Abundant and injurious. Comparatively little trouble in properly treated orchards.

APPLE APHID (Aphis pomi Deg.)

New York. N. Y. State Coll. Agr. News Letter (June 3): Multiplying rapidly in a few orchards in Clinton County, eastern New York, despite moderate numbers of ladybeetles. (June 24): More noticeable now than previously in Wayne and Niagara Counties.



Indiana. L. F. Steiner (June 12): Rapidly increasing in some orchards in the Vincennes area. (June 20): Still increasing around Vincennes.

#### LEAFHOPPERS (Cicadellidae)

Connecticut. P. Garman (June 21): Typhlocyba pomaria McAtee ranges from scarce in some orchards to abundant in a few.

New York. N. Y. State Coll. Agr. News Letter (June 24): T. pomaria is abundant in the lower Hudson River Valley, and also in Wayne County, western New York.

Maryland. E. N. Cory (June 14): White apple leafhopper developing in large numbers in Washington County.

Indiana. L. F. Steiner (June 12): Less abundant than normal in the Vincennes area, but severe infestations reported by growers farther north, in west-central Indiana.

#### PEACH

##### ORIENTAL FRUIT MOTH (Grapholitha molesta Busck)

Delaware. L. A. Stearns (June 19): Emergence of spring-brood moths ended on June 10; twig injury moderate, first-brood larvae being about two-thirds mature on May 31; larvae full grown and pupating by June 7.

Virginia. W. S. Hough (June 15): Twig injury noted at Winchester since late in May. Some larvae have entered the fruit, more having been observed in peaches than in previous seasons.

Georgia. O. I. Snapp (June 21): Infestation at Fort Valley, central Georgia, is about average. Not economically important in commercial peach orchards at Fort Valley.

Florida. G. B. Merrill (June 22): Very abundant on young trees 13 miles northeast of De Funiak Springs, Walton County. According to the owner, the trees were similarly affected last year.

Mississippi. C. Lyle (June 25): Injury to peach twigs reported from Hinds County and injured apple twigs and fruit received from Coahoma and Monroe Counties, respectively. Reports of injury to peach twigs received from Holmes, Sunflower, Oktibbeha, Hinds, Claiborne, and Madison Counties, and from northeastern Mississippi.

Correction.—On page 129 of the Insect Pest Survey Bulletin dated June 1, 1940, it was stated that the oriental fruit moth had been recorded for the first time in Texas. This is erroneous, as there was one previous record in 1925.

PEACH BORER (Conopia exitiosa Say)

Tennessee. G. M. Bentley (June 19): Reported as damaging peach trees at Winchester, Franklin County.

Mississippi. N. D. Peets (June 25): Reported as fairly abundant in Lincoln County.

Nebraska. H. D. Tate (June 18): Reports of injury to peach trees in Otoe and Nemaha Counties received on May 23 and June 11, respectively.

PLUM CURCULIO (Conotrachelus nenuphar Hbst.)

Connecticut. P. Garman (June 21): Locally abundant in apple and peach. Severe damage caused in commercial orchards, although not so severe as last year.

New York. N. Y. State Coll. Agr. News Letter (June 24): As much injury as last year in many orchards in the lower Hudson River Valley and some injury noted in the Lake district.

Virginia. A. M. Woodside (June 24): Larvae have about ceased leaving drop peaches in Augusta County. Adults in insectary still depositing eggs, although at a slower rate. Larvae have pupated in large numbers, but no adults have emerged in the cages.

Georgia. O. I. Snapp (June 21): Peak of emergence of larvae from peach drops at Fort Valley occurred on May 21, 22 days later than peak of larval emergence last year. Only 1,675 larvae reared from 1 bushel of drops collected on May 14 in 1 of the most heavily infested orchards in this locality, representing infestation of only about 21 percent. Infestation in the Georgia peach belt considerably lighter than that of an average year. First pupation at Fort Valley recorded in the insectary on May 29. First transformation to adults in the insectary was recorded on June 12. New adults began to emerge from the soil in commercial peach orchards on June 17 and in the insectary on June 18. This is 3 weeks later than last year, and all varieties except Elberta are expected to escape second-brood attack. Many varieties already harvested with practically no damage. Marked increase of adults noted when jarring in peach orchards on June 20, owing to emergence of new adults. (June 24): Peak of emergence of first-generation beetles from the soil occurred at Fort Valley on June 22, 18 days later than last year.

Mississippi. C. Lyle (June 25): Reported as abundant in Hinds and Lincoln Counties, and in the Meridian area.

Tennessee. L. B. Scott (June 25): Normally abundant in north-central Tennessee, and infestation in peaches is about normal.

Ohio. T. H. Parks (June 20): More abundant than usual on apples and stone fruits throughout the State.



Indiana. L. F. Steiner (June 12): A heavy crop of apples in an orchard (untreated for 2 years) in the Vincennes area, has been damaged almost 100 percent.

GREEN STINKBUG (Acrosternum hilare Say)

Virginia. A. M. Woodside (June 24): Heavy damage to fruits of peach in restricted localities in Augusta County. No damage reported nor seen in sections where commercial orchards are located.

PEAR

PEAR PSYLLA (Psylla pyricola Foerst.)

Connecticut. P. Garman (June 21): Very slow in developing; outbreak threatened in one large orchard.

New York. N. Y. State Coll. Agr. News Letter (June 24): Little damage caused anywhere in the State.

PEAR THRIPS (Taeniothrips inconsequens Uzel)

Washington. W. S. Gillard (June 5): Extensive injury on buds of pear in the Underwood area on May 31. More abundant in this area than last year, and the pear drop is heavy.

A PEAR MIDGE (Dasyneura pyri Bouche)

Connecticut. E. P. Felt (June 26): Severe infestation on young leaves at Noroton, many being dwarfed and discolored.

CHERRY

CHERRY LEAF MINER (Profenusa canadensis Marlatt)

Connecticut. E. P. Felt (June 25): Locally abundant at Stamford.

New York. D. W. Hamilton (June 24): Mines present in leaves by May 30 at Hudson, eastern New York. Most of the larvae had left the leaves by June 6. Only a few orchards show injury, the percentage of leaves injured per tree being less than last year, but the number of trees with injured leaves having increased.

New Jersey. E. P. Felt (June 25): Observed at South Orange.

Delaware. E. P. Felt (June 25): Seen at Wilmington.

CHERRY FRUITFLIES (Rhagoletis spp.)

New York. D. W. Hamilton (June 24): Black cherry fruitfly (R. fausta O.S.) adults in emergence cages near Germantown, Columbia County, from June 1 to 5. Cherry fruitfly (R. cingulata Loew) adults were first found in emergence cages at Germantown on June 11. Emergence is still taking place.



Ohio. E. W. Mendenhall (June 21): Sweet cherries in Franklin County badly infested with R. cingulata, especially where not treated.

Michigan. R. Hutson (June 22): R. cingulata reported from Gobles and Stevensville on June 13; from Benton Harbor on June 14; from Grand Rapids on June 17; out in cages with R. fausta at Sparta and Muskegon on June 18; R. fausta out at Shelby on June 20; and R. cingulata reported out in Oceana County on June 21 and in Leelanau County and at Traverse City on June 22.

Washington. W. S. Gillard (June 5): Fly injury began in Skamania County on May 31.

PEAR SLUG (Caliroa cerasi L.)

Utah. G. F. Knowlton (June 22): Cherry foliage seriously injured at Logan.

PLUM

PLUM LEAFHOPPER (Macropsis trimaculata Fitch)

Virginia. W. F. Turner (June 21): Collected from wild plum on June 15 in Bedford County. (Det. by P. W. Oman.)

Georgia. W. F. Turner (June 10): Collected from plum in Walker County on June 6. (Det. by P. W. Oman.)

GLOBOSE SCALE (Lecanium prunastri Fonsc.)

Pennsylvania. Mrs. L. C. Smith (June 18): Found on plum at Hanover. (Det. by H. Morrison.)

BRAMBLES

RED-NECKED CANE BORER (Agrilus ruficollis F.)

Minnesota. A. G. Ruggles and assistants (June 7): Unusual numbers observed in raspberry fields in Hennepin County. Moderately abundant on raspberry at Mahanomen, Mahanomen County.

IMPORTED CURRANT WORM (Pteronidea ribesii Scop.)

Minnesota. A. G. Ruggles and assistants (June): Moderately abundant on gooseberry at Saint Paul.

AN APHID (Aphis varians Patch)

Utah. G. F. Knowlton (June 21): Black currant damaged at Morgan and Peterson.

GRAPE

GRAPE LEAFHOPPER (Erythroneura comes Say)

New York. N. Y. State Coll. Agr. News Letter (June 10): Very abundant on grape vines on Long Island. (June 17): Adults are severely damaging foliage in vineyards situated near good hibernation quarters in Chautauqua County, western New York.

GRAPE LEAF FOLDER (Desmia funeralis Hbn.)

Ohio. E. W. Mendenhall (June 1): Present to some extent in central Ohio and damaging foliage.

GRAPE BERRY MOTH (Polychrosis viteana Clem.)

Michigan. R. Hutson (June 22): Hatching started at Lawton in numbers on June 7. Grapes not in full bloom until June 11 and 12.

PECAN

FALL WEBWORM (Hyphantria cunea Drury)

Georgia. O. I. Snapp (June 22): Nests, about 1 week old, observed on June 22 at Fort Valley on apple, walnut, and pecan trees, about 3 weeks later than they appeared last year.

Florida. A. H. Madden (June 21): Becoming moderately abundant on pecan trees in the vicinity of Quincy.

Mississippi. C. Lyle (June 25): Heaviest early infestation in many years appeared in Oktibbeha County on about June 15, some large pecan trees having dozens of webs; also reported as fairly numerous in the southeastern part of the State.

PECAN PHYLLOXERA (Phylloxera devastatrix Perg.)

Mississippi. C. Lyle (June 25): Specimens and reports received from Claiborne, Humphreys, Quitman, Tallahatchie, Warren, and Washington Counties, where pecan trees had been seriously injured. In some instances most of the small nuts had turned into galls. Undoubtedly the worst outbreak in several years, as other counties reported severe injury last month.

APHIDS (Aphidae)

Alabama. J. M. Robinson (June 13): Black pecan aphid (Melanocallis caryae-foliae Davis), the yellow hickory aphid (Monellia caryella Fitch), and the black-margined aphid (M. costalis Fitch) observed on pecan foliage at Auburn on May 22. The giant hickory aphid (Longistigma caryae Harr.) was reported as attacking pecan at Montevallo on May 24.

Mississippi. C. Lyle (June 25): Specimens of L. caryae received from Hinds and Lee Counties, where they were found on magnolia and pecan trees.

### CITRUS

#### CALIFORNIA RED SCALE (Aonidiella aurantii Mask.)

Arizona. C. D. Lebert (June): Two infestations found on citrus in the Phoenix area during June, being spot infestations involving only two or three trees; apparently carry-overs from the original infestation in the same area in 1935. Light infestation on ornamentals, involving 10 or 12 plants of euonymus, Spanish broom, jasmine, and sour orange, found and eradicated in the Tucson area.

California. R. S. Woglum (June): Red scale has been hatching more or less all winter, especially in the warmer areas, resulting in a general increase in most districts, as compared with last year at this time. In the interior the increase is more outstanding on oranges than on lemons. In coastal districts lemons continue to be more seriously affected than oranges.

#### BLACK SCALE (Saissetia oleae Bern.)

California. R. S. Woglum (June): Very few orchards show heavy infestation in the coastal area of double-brooded black scale from Santa Barbara to San Diego. In the more interior areas it has been increasing, with the exception of a few areas. Most severely affected area extends from Cucamonga to Redlands, where it is much worse than for several years. Some increase in the area from Cucamonga to San Fernando. Scattered orchards in Riverside County severely infested, most of them untreated, but generally well controlled. Hatch well started.

#### CITRICOLA SCALE (Coccus pseudomagnoliarum Kuw.)

California. R. S. Woglum (June): Increasing in eastern San Bernardino County and at Highgrove and Corona. Hatch well under way. Increase has been steady during the last few years, chiefly owing to favorable weather.

#### CITRUS THRIPS (Scirtothrips citri Moul.)

California. R. S. Woglum (June): Increase during the last few weeks in most lemon districts of Los Angeles, San Bernardino, and Riverside Counties. Considerable increase on oranges, particularly in eastern San Bernardino County, and to a lesser degree in the western part of the county. Considerable scarring on the new crop of oranges during the last 2 or 3 weeks.



TRUCK - CROP INSECTS

VEGETABLE WEEVIL (Listroderes obliquus Klug)

Louisiana. M. T. Young (May 23): Cold weather had little effect on the vegetable weevil.

Arkansas. D. Isely (June 19): Found to occur in destructive numbers as far west as Garland County.

BLISTER BEETLES (Meloidae)

Georgia. D. F. Farlinger (June 14): Epicauta vittata F. causing light injury on peanuts, beets, and tomatoes in gardens at Fort Gaines, Clay County.

T. L. Bissell (June 26): Blister beetles, probably E. vittata, injuring cotton at Cuthbert on May 31. Macrobasis unicolor Kby. numerous on potatoes at Blairsville on June 19.

Kentucky. W. A. Price (June 27): Black blister beetles (E. pennsylvanica Deg.) received from Campbellsville on June 25, with statement that they were ruining potato vines.

Mississippi. C. Lyle and assistants (June 25): Reported as numerous in the southeastern part of the State; gray blister beetle (E. cinerea Forst.) present in Monroe County. Specimens of E. lemniscata F. received from Copiah, Jefferson, Lamar, Noxubee, Prentiss, and Webster Counties, and reported from Clarke County. Injured tomatoes, potatoes, soybeans, corn, and garden crop. Considerable damage reported from Monroe County and reported as abundant on cotton in Lawrence County.

Texas. R. K. Fletcher (June 21): E. lemniscata caused severe injury to tomatoes on June 6 in Van Zandt County.

Minnesota. A. G. Ruggles and assistants (June): M. unicolor very abundant on various legumes at Minneapolis.

North Dakota. F. G. Butcher (June 25): Reported abundant from nearly all sections of the State, injuries being largely confined to legumes, gardens, and ornamentals. A few cases of defoliation of potato fields noted.

Arizona. H. G. Johnston (June 20): E. pardalis Lec. widely distributed and causing serious damage to potatoes throughout Yavapai and Coconino Counties. Insects migrate into small cultivated areas surrounded by extensive range-land.

SEED-CORN MAGGOT (Hylemya cilicrura Rond.)

Connecticut. N. Turner (June 20): Ruined 1 acre of squash at Mount Carmel. Abundant in many squash and lima-bean fields planted during rainy weather late in May.

New York. N. Y. State Coll. Agr. News Letter (June 24): In Monroe County, western New York, caused severe injury to beans planted around May 25. June 5 plantings escaped almost entirely, which is unusual. Out in large numbers and active during early part of the week. Reported as present in peafields in the Wolcott and South Butler area, Wayne County.

Indiana. J. J. Davis (June 22): Reported as infesting planted squash seed at Marion on June 3. A number of reports received from other parts of the State, chiefly central Indiana, stating that planted corn and soybean seeds were attacked.

Michigan. R. Hutson (June 22): Found in sprouting corn at Centerville on May 28.

Washington. E. C. Durdle (June 9): Reported as attacking peas and causing severe losses in home gardens of the Vancouver area, Clark County.

### POTATO AND TOMATO

#### COLORADO POTATO BEETLE (*Leptinotarsa decemlineata* Say)

New York. N. Y. State Coll. Agr. News Letter (June 10): Beetles appeared in numbers in Nassau County and started laying eggs with renewed vigor after having practically disappeared during the last week in May. Newly hatched larvae found for the first time on June 7. Adults numerous in some fields, and mating and egg laying are proceeding rapidly. (June 24): Few masses of eggs still being laid in Nassau County. Hatching rate has been nearly uniform since June 15. In western New York eggs are being laid and some injury is noticed.

Delaware. L. A. Stearns (June 10): Light infestation on plantings of tomatoes made on May 9, 10, and 11 at Rising Sun, Kent County.

Virginia. H. G. Walker and L. D. Anderson (June 24): Rather abundant this spring. Caused severe damage where proper control measures were not applied.

Mississippi. C. Lyle and assistants (June 25): Reported as injuring potatoes and tomatoes in Leflore County; in large numbers on tomatoes in Pearl River County; and numerous on potatoes in the State College area.

Tennessee. G. M. Bentley (June 24): Destroyed 50 percent of the leaves of potatoes in McMoresville, Carroll County, on May 27. No injury has been caused to potatoes on the Cumberland Plateau.

Minnesota. A. G. Peterson (June 13): Eggs abundant at Brooklyn Center, Hennepin County, on June 10, and a number were hatching.

Iowa. H. E. Jaques (June): Reported from scattered localities over the State.

Utah. G. F. Knowlton (June 13): Scarce most of the season in the infested area of Weber and northern Davis Counties.

Washington. L. G. Smith (June 19): First time ever reported in Clark County, in the locality of Sifton, near Orchards. Potatoes not damaged. (June 4): Beetles reported as doing limited damage to potatoes in the Okanogan area. Outbreaks not previously noticed in Okanogan County.

POTATO FLEA BEETLES (Epitrix spp.)

Connecticut. N. Turner (June 20): Unusually heavy spring infestation of E. cucumeris Harr. reported on potatoes and tomatoes, with serious damage to untreated plants.

Kentucky. W. A. Price (June 27): E. cucumeris abundant on potatoes in the Bluegrass area.

Minnesota. A. G. Peterson (June 13): E. cucumeris moderately abundant at Brooklyn Center, Hennepin County, and at the University Farm, in Ramsey County, on June 10.

Montana. H. B. Mills (June 19): Injury by western potato flea beetle (E. subcrinita Lec.) evident on potatoes, radishes, and beets in the vicinity of Bozeman.

Washington. H. Dodge (June 10): Potato flea beetle (Epitrix sp.) caused slight tuber injury on the west side of the Yakima River, in Kittitas County. Potato vines slightly laced.

HORNWORMS (Protoparce spp.)

South Carolina. J. G. Watts (June): By June 10, P. quinquemaculata Haw. and P. sexta Johan. were doing considerable defoliation in untreated tomatoes at Blackville. Practically absent on treated fields. The latter species was more abundant than the former. Local damage on untreated fields extensive by the end of the month.

CORN EAR WORM (Heliothis armigera Hbn.)

Georgia. T. L. Bissell (June 26): Numerous reports received from Experiment during the last week. Eggs and larvae  $\frac{1}{2}$  inch in length found today, but larvae doubtless larger where fruit is larger.

Ohio. H. C. Mason (June): One egg and three small larvae found on tomatoes at South Point on June 21. Several moths and large larvae found on same date on sweet corn that was starting to tassel.

South Carolina. J. G. Watts (June): Infestation at Blackville on untreated tomatoes has increased gradually since the middle of May. On June 11 in 1 untreated field all fruits were picked that would not be marketable. Of a sample of 200 of these fruits, 76.5 percent were damaged.

Mississippi. C. Lyle and assistants. (June 25): Reported that tomatoes have been injured in Hinds, Copiah, and Lincoln Counties. Heavy damage has occurred in the Meridian area.



APHID (Macrosiphum solanifolii Ashm.)

Virginia. H. G. Walker and L. D. Anderson (June 24): Rather abundant in some fields of potatoes, tomatoes, and eggplants in the Norfolk area and on the Eastern Shore of Virginia.

Louisiana. M. T. Young (May 23): Potato aphids unusually bad this spring.

A ROOT APHID (Trifidaphis phaseoli Pass.)

Virginia. F. R. Freund (June 12): Causing considerable damage in one field of tomatoes and light damage in another, both in Westmoreland County. (Det. by P. W. Mason.)

POTATO LEAFHOPPER (Empoasca fabae Harr.)

New York. N. Y. State Coll. Agr. News Letter (June 3): Adults appeared on hops in Oneida County, western New York, in unusually large numbers during the second week of May. (June 10): Taken on potato for the first time on June 6, which is a rather early appearance in Nassau County, eastern New York. (June 17): Observed in field in Nassau County. Incoming migration seems to have stopped temporarily as they are not nearly so abundant in light-trap catches as when first reported.

Louisiana. M. T. Young (May 23): Unusually bad this spring.

Iowa. H. E. Jaques (June): Reported from scattered localities throughout the southern half of the State.

Minnesota. A. A. Granovsky (June 13): First appearance noted on June 2 at Saint Paul. Reported as scarce in Brooklyn Center, Hennepin County. None observed on June 5. On June 10 about 5 or 6 were taken from 50 sweeps of the net.

BEEF LEAFHOPPER (Eutettix tenellus Bak.)

Utah. G. F. Knowlton (June 21): Curly-top of tomatoes at Spanish Fork and Mapleton Bench ranges from 2 to 13 percent. Injury observed at Pleasant Grove and Orem. Present on beans, and curly-top is destroying some bean plants at Bluffdale and Riverton.

POTATO PSYLLID (Paratrioza cockerelli Sulc.)

Nebraska. H. D. Tate (June 18): Request for proper time to apply control measures received from Lincoln County on June 4.

A PENTATOMID (Hymenarcys nervosa Say)

Missouri. T. E. Birkett (June 16): Was doing considerable damage to Irish potato plants at Neosho. (Det. by H. G. Barber.)

BEANS

MEXICAN BEAN BEETLE (Epilachna varivestis Muls.)

- Massachusetts. A. I. Bourne (June 20): Invasion of gardens and larger plantings in the Amherst section by overwintered beetles noticed during first part of week of June 9. More numerous than usual.
- Connecticut. N. Turner (June 20): Abundant on garden beans and destructive in a few areas.
- New York. N. Y. State Coll. Agr. News Letter (June 10): Overwintered adults observed since first of the month and are causing some injury in the lower Hudson River Valley and on Long Island. No eggs observed. In western New York the first beetles were observed on June 5 and 6.
- Maryland. E. N. Cory (June 4): Present on beans at Contee.
- Gertrude Myers (June 25): Moderately abundant around Rockville.
- T. L. Bissell (June 26): On snap beans at Westover on June 12.
- Virginia. H. G. Walker and L. D. Anderson (June 24): More abundant than usual in Norfolk and Princess Anne Counties and on the Eastern Shore of Virginia.
- South Carolina. J. G. Watts (June): Doing some damage to beans at Blackville.
- Georgia. D. F. Farlinger (June 14): Caused severe injury to snap and lima beans in Clay and Tift Counties.
- T. L. Bissell (June 26): Quite injurious on beans at Tifton on June 24. Heavy damage to beans reported on June 25 from Blairsville, northeastern Georgia.
- Florida. A. H. Madden (June 13): Reported as attacking all varieties of beans in Gadsden County. Fairly widespread throughout the county. All stages present in considerable abundance.
- Alabama. J. M. Robinson (June 13): Moderately abundant at Auburn on May 15.
- Mississippi. C. Lyle (June 25): Reported as present in a general heavy infestation in the Meridian area and as numerous at State College and in Calhoun County.
- Louisiana. M. T. Young (May 23): Reported as covering an area near Bogalusa 10 miles square.
- Tennessee. G. M. Bentley (June 24): Medium infestation generally over the State on May 26.
- L. B. Scott (June 25): Normally abundant in north-central part of State. Reported as damaging beans.

Ohio. H. C. Mason (June 2): Observed feeding on beans at Columbus.

R. H. Nelson (June): Infestation light at South Point. First pupae found on June 20, indicating hatching on about June 1. Most eggs did not begin hatching until about June 15.

BEAN LEAF BEETLE (Carotoma trifurcata Forst.)

Maryland. T. L. Bissell (June 26): Conspicuous damage noted at Westover on June 12.

South Carolina. J. G. Watts (June): Adults have been doing more damage than usual on beans and peas at Blackville. Still feeding extensively on these crops in home gardens.

Alabama. J. M. Robinson (June 13): Very abundant at Auburn on May 15.

Mississippi. C. Lyle (June 25): Reports of injury received from Sunflower County and from the Meridian area.

Louisiana. M. T. Young (May 23): More injurious than usual.

Indiana. J. J. Davis (June 22): Reported as damaging garden beans in Washington County, southern Indiana, on June 20.

Arkansas. D. Isely (June 19): Unusually abundant in the Delta counties this spring. Caused considerable damage to seedling soybeans and more than usual damage to garden beans.

Ohio. T. H. Parks (June 6): Present and feeding on garden beans in commercial gardens south of Columbus.

PEAS

PEA APHID (Macrosiphum pisi Kltb.)

New York. N. Y. State Coll. Agr. News Letter (June 10): Initial infestation on peas in Onondaga County, western New York, present in small field of peas just about to bloom. (June 17): Rather abundant in fields in the Wolcott and South Butler areas, Wayne County. (June 24): Infestations very spotted in Orleans County. Continually increasing in numbers in South Butler area.

Virginia. H. G. Walker and L. D. Anderson (June 24): Not as abundant as usual at Norfolk on alfalfa. Rather heavy infestations developed on peas late in the season, but damage was light because the crop was largely made before it was attacked.

Utah. G. F. Knowlton (June 4): Attacked early peafields at Layton and Kaysville. Less populous than a week ago in early peas examined in Weber and Davis Counties.



Washington. T. A. Knoblauch (June 10): Reported as doing serious damage to peas in the Snohomish and Monroe districts of Snohomish County. Control measures started the first week in June in many fields.

PEA WEEVIL (Bruchus pisorum L.)

Utah. G. F. Knowlton (June 4): Three pea weevils found yesterday at Kaysville and Clinton in an inspection of eight peafields in parts of Weber and Davis Counties. (June 20): Severely damaged canning peas are being condemned in the Pleasant View and Geneva areas of Utah County.

Washington. L. G. Smith (June 5): Peafield at Waverly, Spokane County, in full bloom on June 3. Some pods were beginning to form and eggs had been deposited. Population averaged from 25 to 50 per 25 sweeps around edge of field.

A WEEVIL (Sitona lineata L.)

Washington. L. G. Smith (June 5): Specimens sent for identification from San Juan County, with report that they were causing considerable damage to the foliage of field peas. Entire fields of 10 to 12 acres seemed to have 90 percent of the plants affected. Larvae found at the roots of the peas. Determined by L. L. Buchanan as the first specimens seen in the United States.

CABBAGE

CABBAGE MAGGOT (Hylemya brassicae Bouche)

Maine. J. H. Hawkins (June 12): More abundant on early cabbage than usual at Orono, causing up to 25-percent loss.

Connecticut. A. W. Morrill, Jr. (June 22): Severe injury to onions and cabbage reported by large number of growers.

New York. N. Y. State Coll. Agr. News Letter (June 24): Infestation severe this year in cabbage-growing sections of State.

APHIDS (Aphididae)

New York. N. Y. State Coll. Agr. News Letter (June 3): Heavy infestation in three cabbage fields in Rockland County, eastern New York, from 5 to 10 percent of the plants being killed. Milder infestation seen in two fields in Columbia County a week ago.

Ohio. R. H. Nelson (June): Brevicoryne brassicae L. completely destroyed improperly treated fields of cabbage at South Point. Parasites and predators have almost eliminated the infestation now.

Indiana. J. J. Davis (June 22): B. brassicae very abundant in cabbage at Crown Point, in northwestern Indiana, on June 19. Earliest report of damage came on June 1 from Madison, on the Ohio River.

Tennessee. G. M. Bentley (June 24): B. brassicae reported as causing injury to cabbage in Carroll County on June 10.

L. B. Scott (June 24): Aphids more than normally abundant on cabbage in north-central Tennessee.

Nebraska. H. D. Tate (June 18): Request for control of cabbage aphid (B. brassicae) received from Nance County on June 6.

Utah. G. F. Knowlton and F. C. Harnston (June 4): Severely damaging cabbage at Moab.

#### CABBAGE CURCULIO (Ceutorhynchus rapae Gyll.)

Ohio. T. H. Parks (June 20): Cabbage plants received from Morgan County on June 1 showing punctures and carrying larvae and eggs in the stems. Reported from adjoining county 2 years ago.

#### MELONS

#### BEETLES (Blapstinus spp.)

Arizona. H. G. Johnston (June 15): Small darkling beetles causing serious damage in the Salt River Valley to cantaloups by eating off the surface netting from the rind. Injury begins when cantaloups are quite small and continues until the crop is ready for harvest, reducing considerably the market value.

#### GRAPE COLASPIS (Colaspis brunnea F.)

Mississippi. C. Lyle (June 25): Watermelons severely damaged in Choctaw County

#### CUCUMBERS

#### STRIPED CUCUMBER BEETLE (Diabrotica vittata F.)

Mississippi. C. Lyle (June 25): Reported as causing severe damage to cucumbers in Pearl River County, as present on cucumbers and beans in the Meridian area, and on cucumbers in Sunflower County.

#### SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata F.)

Mississippi. C. Lyle (June 25): Specimens taken from garden plants in Copiah County and from cotton in Forrest County. Reported as injuring beans and dahlias in the Meridian area, and as present on cucumbers in Sunflower County.

#### ASPARAGUS

#### ASPARAGUS BEETLES (Crioceris spp.)

Massachusetts. A. I. Dourne (June 20): C. duodecimpunctata L. and C. asparagi L. appear to be normally abundant and causing the usual damage.

Wisconsin. C. L. Fluke (June 21): Egg laying in young plants completed by June 12. Damage to seedbeds in Dane and Columbia Counties ranged from 5 to 50 percent, the early beds being most severely damaged.

### SQUASH

#### SQUASH BUG (Anasa tristis Deg.)

New York. N. Y. State Coll. Agr. News Letter (June 24): First adult found in eastern New York on June 19 in Rockland County, and in western New York first adult seen on June 7 in Onondaga County. Few squash bugs found in Monroe County by June 17.

Mississippi. C. Lyle (June 25): Specimens received from Alcorn County on June 11, and reports of injury by this species from the Durant area and from Pearl River County.

Iowa. H. E. Jaques (June): Reported from a few scattered localities throughout the State.

Nebraska. H. D. Tate (June 18): Inquiries for control measures received from Saunders County late in May and early in June.

Oklahoma. F. A. Fenton (June 24): Reported from Salina, Oklahoma City, and Stillwater.

#### PICKLEWORM (Diaphania nitidalis Stoll)

South Carolina. J. G. Watts (June 25): First evidence this spring was a small larva (probably second instar) in summer straight-neck squash on June 18 at Blackville. About 75 percent of the fruits were being damaged by June 25. Larvae collected from the field on June 20 were spinning their cocoons on June 24.

Mississippi. C. Lyle (June 25): Reported as abundant on squash in Pearl River County and in the Durant area. Also reported from Oktibbeha County.

Maryland. E. N. Cory (June 3): C. asparagi present on asparagus at Silver Spring.

South Carolina. J. G. Watts (June): C. asparagi noticeably abundant at Blackville around June 1. Damage not serious on old plantings, but by June 7 some newly set fields were extensively defoliated.

Minnesota. K. A. Kirkpatrick (June 7): C. asparagi and C. duodecimpunctata moderately abundant on asparagus at Minneapolis. Reports also received from other places in Hennepin County.

Utah. G. F. Knowlton (June 13): Asparagus beetle damaged most of the asparagus raised in the infested area in northern Utah this season.



Washington. R. D. Eichmann (June 5): Second-brood adults were just beginning to appear on May 28 and 29 at Walla Walla, Sunnyside, Prosser, and Kennewick. No eggs had yet appeared. Cutting season had about ended, and damage to asparagus stalks in most localities was negligible.

### ONIONS

#### ONION MAGGOT (Hylemya antiqua Meig.)

Montana. H. B. Mills (June 19): Some plantings badly infested at Billings. Abundance average at Bozeman.

Utah. G. F. Knowlton (June 11): Damaging onions at Logan and Heber. (June 13): Onions being damaged at Ogden, Plain City, and Wellsville.

#### ONION THRIPS (Thrips tabaci Lind.)

New York. N. Y. State Coll. Agr. News Letter (June 10): Increasing in numbers and some injury is becoming evident in western Suffolk County. Eggs can now be found on set onions in Orange County, eastern New York.

Virginia. H. G. Walker and L. D. Anderson (June 24): Two weeks later than usual in the Norfolk area. Considerable damage done to late spring cabbage and onions. Rather abundant on cantaloup early in June but seen to be disappearing now.

Egypt. A. H. Rosenfeld (May 29): Severe outbreak on onions in Upper Egypt this spring. Particularly severe in great onion center of Shandawil, near Sohag.

### LETTUCE

#### SIX-SPOTTED LEAFHOPPER (Macrosteles divinus Uhl.)

Maryland. F. F. Smith (June 21): Adults collected in lettuce field and yellows infection first noted at Beltsville on May 22, 1939. In 1940 adults were collected and first diseased plant noted on June 19. In 1939 approximately 50 percent of the asters planted on May 24-26 were infected with yellows a month later, whereas in 1940 only 1 plant was observed to be infected on June 20 in a field planted on May 24.

### SWEETPOTATO

#### SWEETPOTATO LEAF BEETLE (Typophorus viridicyaneus Crotch)

Mississippi. C. Lyle (June 25): Adults received from Simpson County on June 11.

#### TORTOISE BEETLES (Cassidinae)

Indiana. J. J. Davis (June 22): Gold tortoise beetle (Metritona bicolor F.) reported as doing considerable damage to sweetpotatoes in Wells County, in the northeastern part of the State, and as a minor pest from several places in central Indiana.

Mississippi. C. Lyle (June 25): Specimens of the mottled tortoise beetle (Chirida guttata Oliv.) sent from Lincoln County, where they were feeding on sweetpotatoes. M. bivittata Say was injuring sweetpotatoes in Jones and Lincoln Counties.

SWEETPOTATO FLEA BEETLE (Chaetocnema confinis Crotch)

Nebraska. H. D. Tate (June 18): Specimens received from Gage County on June 14, together with a sample of their injury to bindweed.

STRAWBERRY

STRAWBERRY WEEVIL (Anthonomus signatus Say)

Massachusetts. A. I. Dourne (June 20): Reported as very abundant in the Cape Cod region, where many of the large commercial plantings of strawberries are located. Considerable injury noticed, particularly in Barnstable County.

New York. N. Y. State Coll. Agr. News Letter (June 3): Growers in the Hudson Valley are having trouble treating strawberries for weevil control, because of frequent showers. This same weather condition has been responsible for less injury than normal at this stage of host development.

Delaware. L. A. Stearns (May 7): Much less abundant in Bridgeville, Sussex County, than in 1939.

Maryland. T. L. Bissell (June 26): Adults very abundant on overripe fruit, two or three per berry, on June 12 at Westover. No injury evident.

WEEVILS (Brachyrhinus spp.)

Ohio. J. S. Houser (June 14): B. sulcatus F. in the pupal or newly transformed adult stage was seen at Mansfield on several individual plants in a hedge of Taxus, which had been killed.

Utah. G. F. Knowlton and R. L. Janes (June 1): Black vine beetle (B. sulcatus) recently introduced into Utah, seriously damaging two strawberry patches on Providence Ranch. A few adults and larvae, as well as numerous pupae, are present.

G. F. Knowlton (June 21): Strawberry root weevils (B. ovatus L. and B. rugosostriatus Goeze) are damaging strawberry and raspberry patches throughout Utah County. Adults abundant.

Washington. L. G. Smith (June 5): Adults of B. ovatus found on May 30 in gardens at Pullman, Whitman County. Control measures successful this year in Skamania County, where extensive damage took place last year.

STRAWBERRY LEAF ROLLER (Ancylis comptana Froel.)

Indiana. J. J. Davis (June 22): Very abundant in a strawberry field at Warsaw, northern Indiana, on June 14.

Wisconsin. C. L. Fluke (June 21): Prevalent in larger numbers this year than last, in Dane and Rock Counties.

Nebraska. H. D. Tate (June 18): Reports of damage to strawberry plants received from Grant and Buffalo Counties on June 13 and 15, respectively.

STRAWBERRY SLUGS (Empria spp.)

Wisconsin. C. L. Fluke (June 21): Severely damaging strawberries in Trempealeau and Price Counties. Species not determined.

Minnesota. A. G. Ruggles and assistants (June): E. fragariae Rohw. very abundant on strawberries at Saint Cloud and New Brighton.

CYCLAMEN MITE (Tarsonemus pallidus Banks)

New York. N. Y. State Coll. Agr. News Letter (June 3): Many strawberry plants in western Suffolk County show injury. (June 17): Moderate injury found in part of a strawberry planting in Orange County.

RED SPIDERS (Tetranychus spp.)

Virginia. H. G. Walker and L. D. Anderson (June 24): Very abundant in some strawberry fields early in the season at Norfolk. Owing to weather conditions, not nearly so much damage occurred as was expected.

TOBACCO

TOBACCO FLEA-BEETLE (Epitrix parvula F.)

Florida. F. S. Chamberlin (June 5): Continues to be unusually scarce in the tobacco-producing region of Gadsden County.

Tennessee. L. B. Scott (June 25): Moderately abundant in north-central Tennessee. Very little damage.

TOBACCO THRIPS (Frankliniella fusca Hinds)

Connecticut. A. W. Morrill, Jr. (June 22): Fewer in numbers on tobacco plants than usual.

SOUTHERN GREEN STINKBUG (Nezara viridula L.)

Florida. F. S. Chamberlin (June 14): Causing some injury to sun-grown tobacco in Gadsden County.



A CHIRONOMID (Orthocladius nigritus Mall.)

Maryland. C. Graham (June): Present on tobacco beds at La Plata. (Det. by C. T. Greene.)

SEED-CORN MAGGOT (Hylemya cilicrura Rond.)

Connecticut. A. W. Morrill, Jr. (June 22): Severe damage reported in spots by some tobacco growers. Not widespread.

TOBACCO BUDWORM (Heliiothis virescens F.)

Florida. F. S. Chamberlin (June 26): More abundant than usual in tobacco in Gadsden County.

HORNWORMS (Protoparce spp.)

Tennessee. L. B. Scott (June 25): First eggs in north-central Tennessee were found on June 9. Larvae now normally abundant. Very little damage to tobacco.

CORN ROOT WEBWORM (Crambus caliginosellus Clem.)

Tennessee. L. B. Scott (June 25): Less than normally abundant in tobacco fields in north-central Tennessee, and damage only moderate. A 50-acre field of corn in Cheatham County very severely damaged.

SPRINGTAILS (Collembola)

Tennessee. L. B. Scott (June 25): Undetermined species caused moderate damage to tobacco in several plant beds in north-central Tennessee. In several instances infestation has spread to field tobacco.

C O T T O N I N S E C T S

BOLL WEEVIL (Anthonomus grandis Boh.)

South Carolina. F. F. Bondy and C. F. Rainwater (June 15): Still few in number in Florence County. Four taken from the hibernation cages, 28 from the trap crop, and 1 from the screen traps this week. A total of 63,600 plants was examined in Marion, Florence, and Calhoun Counties on 42 farms, and only 65 weevils found, averaging 1 per 978 plants, as compared to an average of 1 per 893 plants last week.

J. G. Watts (June 25): Activity on cotton at Blackville is relatively unimportant.

Georgia. P. M. Gilmer, et al. (June 8): Now appearing in fair numbers in favorably located fields, near good hibernation quarters, in Tift, Berrien, Cook, Lowndes, and Echols Counties. The most heavily infested point was near Enigma, Berrien County, where, in crossing an 8-acre field, 8 weevils

were taken without search. Average was less than 1 weevil per 1,500 plants. No infestation at all at many points, such as in Echols County and in 2 fields in southern Berrien County. Infestation undoubtedly very light, although weather conditions have been ideal for weevils. (June 15): Numbers have increased during the last week in the field in Tift, Cook, and Berrien Counties. Two out of 7 fields were found with infestations of approximately 4 percent. The rest ranged from below 1 percent to no injury nor weevils found. General infestation still very light. Weevils are considerably more abundant than previously, although still relatively few in numbers, as compared with normal years. (June 22): Over most of Tift and Berrien Counties weevils are apparently about at the peak. Infestation exceedingly spotted, ranging from 2 to 11 percent and averaging between 4 and 6 percent. Some lessening in numbers of fresh punctures during the last days of the week.

Florida. C. S. Rude, et al. (June 15): Conditions better than for the same period in either 1938 or 1939. Fifteen fields examined in Lake County, 3 being infested from 6.2 to 13.6 percent; 17 fields examined in Alachua County, of which 9 were infested from 0.2 to 24.8 percent; 11 fields examined in Marion County, 7 of which were infested from 0.4 to 2.6 percent; and 15 fields inspected in Gilchrist County showed 8 infested from 0.2 to 2.0 percent. Total of 21 weevils removed last week and 5 this week from hibernation cages at McIntosh, Marion County, and 22 last week and 16 this week from cages at Fruitland Park, Lake County. (June 22): Four fields examined in Union County, of which 2 were infested from 0.8 to 1.2 percent; 15 fields in Alachua County showed 9 infested from 0 to 29 percent; 13 fields in Gilchrist County showed 4 infested from 0 to 2.2 percent; 11 fields in Marion County showed 7 infested from 0 to 2.4 percent; and 16 fields in Lake County showed 5 infested from 0 to 14.4 percent. Average infestation in all fields was 1.7 percent, as compared to an average of 21.7 percent for the week ended June 24, 1939, and 29 percent for the week ended June 25, 1938.

Mississippi. C. Lyle (June 25): Received from Forrest County on June 12. A few found in Holmes and Sunflower Counties; a light infestation reported from the Meridian area; and light damage reported from the southwestern part of the State. Generally there seems to be about one-tenth the number present at this time in 1939, almost no weevils occurring in the northern third of the State.

Louisiana. R. C. Gaines and assistants (June 15): During the period June 7 to 13 in Madison Parish, 201 weevils were found on 78,000 plants, averaging 1 per 388 plants, as compared with 439 weevils on 59,000 plants, or 1 per 134 plants, during the same period in 1939, and 287 weevils on 48,000 plants, or 1 per 167 plants in 1938. One taken on the field flight screen during the week. (June 22): Punctured squares observed in a few fields near timber. Five taken on field flight screens for the week.

Texas. F. L. Thomas (June 25): First generation now emerging in the vicinity of College Station, and infestation averaging 32 percent found in four fields near woodlands. Six fields in the vicinity of Waco had an average of 21 percent of the squares punctured.



K. P. Ewing, et al. (June 22): Three removed from the hibernation cages in McLennan County during the period June 17 to 22, inclusive. Emergence to date amounts to 32 weevils, or 0.0914 percent. Most of the weevils are now in squares. During the week 1,600 squares in 6 fields showed an average of 20.95 percent of punctured squares. The range was from 9 to 48 percent.

C. R. Parencia, et al. (June 22): Only a very few weevils or punctured squares found in Calhoun County. Counts made on the variety tests on June 19 showed less than 1 percent of the squares punctured.

A WEEVIL (Compsus auricephalus Say)

Louisiana. C. O. Eddy (June 11): Taken commonly on cotton in the Shreveport area and less frequently in the Alexandria area. (Det. by L. L. Buchanan.)

BEEET ARMYWORM (Laphygma exigua Hbn.)

Arizona. W. A. Stevenson (June 8): First reports of damage to young cotton in Pima County received during the first part of the week from Marana. Approximately 80 acres found infested to the extent that immediate control measures were used. A few of the larvae found feeding on the leaves of larger cotton, but damage was not sufficient to justify control measures. (June 15): Infestation practically cleared up at Marana by the end of the week. An occasional larva could be found.

PINK BOLLWORM (Pectinophora gossypiella Saund.)

Texas. H. S. Cavitt (June 22): Bloom examinations made at Loma Palona, Presidio County, on June 20 showed 6 out of 1,000 blooms to be infested. Only 3 moths emerged from the hibernation experiment during the week.

BOLLWORM (Heliothis armigera Hbn.)

South Carolina. F. F. Bondy and C. F. Rainwater (June 22): A few found in the buds of young cotton plants in Florence County.

Georgia. P. M. Gilmer, et al. (June 15): A few taken boring into small squares in Tift, Cook, and Berrien Counties. No serious damage, although these larvae are earlier than normal in cotton.

Florida. C. S. Rude, et al. (June 22): A few seen in the cotton-growing area of Florida.

COTTON LEAF WORM (Alabama argillacea Hbn.)

Florida. C. S. Rude, et al. (June 22): Mature larvae and pupae collected in a field near Trenton, Gilchrist County, where they were observed feeding. (Det. by C. Heinrich.)

Texas. F. L. Thomas (June 11): First larvae found in Texas this season were taken at Brownsville on May 27. (June 25): Leaf worms have appeared in San Patricio County, just north of Corpus Christi.



SALT-MARSH CATERPILLAR (Estigmene acrea Drury)

Arkansas. D. Isely (June 19): Local damage to cotton caused in a number of counties along the southern border of the State.

Texas. C. R. Parencia, et al. (June 22): A generation of larvae nearly ready to pupate in Calhoun County. Infestation scattered over most of the county and severe ragging observed in a few fields. One field had about 50 acres damaged, adjoining flax, from which the larvae migrated in large numbers. They were moving in a body. In one section of a row  $3\frac{1}{2}$  feet long, 410 larvae were found.

SEED-CORN MAGGOT (Hylemya cilicrura Rond.)

Arizona. T. P. Cassidy (May 21): Only insect injury observed in cotton during April was an unusual case of injury to newly germinated cotton seedlings on a farm 2 miles south of Mesa. In two fields comprising 25 acres, the stand was so impaired as to necessitate replanting. In each case the cotton had been planted immediately after plowing out alfalfa. Occasional alfalfa sprouts scattered over the field showed similar underground damage. (Det. by H. G. Johnston.)

COTTON FLEA HOPPER (Psallus seriatus Rout.)

Mississippi. C. A. Wilson, et al. (June 22): Infestation in Oktibbeha and Lowndes Counties very low, inspection of 12,800 terminal buds in 42 fields yielding an average of 1.8 adults and 0.09 nymph per 100 buds, as compared with an average of 1.64 adults and 1.22 nymphs per 100 buds in examination of 3,600 terminal buds in 15 fields at this time last year. Highest number of adults in any one field was 24 on 600 terminal buds. One field in western Oktibbeha County found to show evidence of damage to the small squares.

Texas. F. L. Thomas (June 4): More damage expected in southern Texas than in 1939, although present indications are that damage will be below average in that area. Numbers more than doubled in a few fields since last week and now approaching abundance sufficient to cause damage, serious damage having already occurred in one field, as reported from Port Lavaca. Slowly increasing in Wharton County. Present in small numbers in central Texas.

C. R. Parencia (June 15): Total of 2,400 terminal buds inspected in 6 fields in Calhoun County. Average of 5.34 adults and 11.86 nymphs found per 100 terminal buds, as compared with 4.44 adults and 12.62 nymphs last week. Young nymphs were appearing in fields examined late in the week. In the variety tests on June 11 a total of 86.5 flea hoppers per 100 terminal buds was found on 1,600 plants on the check plots and a total of 60.25 per 100 terminal buds on 1,600 plants in the treated plots.

K. P. Ewing, et al. (June 22): No nymphs emerged in hibernation cages in McLennan County during the week. In 31 fields 12,700 terminal buds showed an average per field of 4.29 adults and 0.94 nymph per 100 terminal buds. Adult infestation almost doubled that of last week, which averaged

2.54 adults.

H. S. Cavitt (June 22): A rather heavy infestation was observed on June 20 at Loma Palona, Presidio County.

Arizona. T. P. Cassidy (May 21): Small croton plants at Tucson were practically all infested with all stages.

TARNISHED PLANT BUG (Lygus pratensis oblineatus Say)

Mississippi. C. A. Wilson, et al. (June 22): Adults observed as numerous on cotton inspected in Oktibbeha and Lowndes Counties, a few being found in almost every field examined.

E. W. Dunnam, et al. (June 22): Light damage in two fields in Washington County.

Louisiana. R. C. Gaines and assistants (June 15): Adults of this species and of Adelphocoris rapidus Say found in practically all fields in Madison Parish. The former is the more numerous. Some damage caused.

APHIDS (Aphididae)

South Carolina. F. F. Bondy and C. F. Rainwater (June 8): Leaf aphids unusually abundant and have done lots of damage to seedling cotton in Florence County. Root aphids present in large numbers, having done serious damage in some fields.

J. G. Watts (June): Severe damage to young cotton general over a number of Coastal Plains counties late in May and during the first 10 days of June, as follows: Barnwell, Orangeburg, Sumter, Lee, Florence, Dillon, and Marion. Plants were recovering by June 11, although infestation was still noticeable. By June 20 infestation had practically disappeared.

Georgia. P. M. Gilner, et al. (June 1): Now well under control by natural agencies. Still present in much reduced numbers in most fields in Tift, Berrien, Cook, Lowndes, and Echols Counties.

Florida. C. S. Rude, et al. (June 22): A few found in some fields, but not numerous enough to cause damage.

Mississippi. C. Lyle (June 25): Cotton reported as infested by Aphis gossypii Glov. in the Durant and Jackson areas, and numerous reports received from the southwestern part of the State. Heavy infestations reported from Pearl River County, from the Meridian area, and from the northeastern part of the State. Infestation said to be diminishing in the southeastern part of Mississippi and in the State College section. The northeastern section had the heaviest early infestation ever observed by the inspector in that area. Ladybeetles very abundant.

C. A. Wilson (June 8): Very numerous on all of the cotton examined this week in Oktibbeha and Lowndes Counties. Appreciable damage to small cotton everywhere. Coccinellid adults and larvae observed feeding voraciously.

J. C. Clark, et al. (June 8): Examination of 600 plants in the 8-leaf stage in Washington County yielded 3,115 aphids on 511 plants, a decrease from last week.

Louisiana. R. C. Gaines and assistants (June 8): Not very numerous in Madison Parish, except on some fields of young cotton. Ladybeetles and parasites are giving excellent control.

Texas. K. P. Ewing, et al. (June 8): In the black-land section at Riesel, McLennan County, 3,600 leaves were inspected in 18 cottonfields on June 4. Average number per square inch was 0.51. Light infestation found throughout the Waco area, but practically no damage. (June 15): Infestation in McLennan County decreased this week, and no particular damage is being noted in this area now.

#### A MEALYBUG (Pseudococcus sp.)

South Carolina. C. F. Rainwater (May 24): Collected from roots of a plant near St. Matthews on April 3, attended by ants (Lasius sp.); collected from cotton roots at Florence on April 18 and near Orangeburg on May 1; collected on nutgrass roots in the same field near Orangeburg on May 1. In almost every instance where mealybugs were found on cotton, soybeans were the preceding crop. (Det. by H. Morrison as Pseudococcus sp., related to maritimus Ehrh., but distinct.)

#### THRIPS (Thysanoptera)

South Carolina. F. F. Bondy and C. F. Rainwater (June 22): Some seen on cotton in Florence County, but little or no damage done.

Mississippi. E. W. Dunnam, et al. (June 22): Damage can be seen in late and re-planted cotton in Washington County.

Louisiana. R. C. Gaines and assistants (June 8): Damage in Madison Parish appears to be heaviest in the last cotton planted. (June 22): Some fields of young cotton still being damaged.

Texas. F. L. Thomas (June 11): Damage unusually abundant, and apparently some shedding of small squares has been caused.

K. P. Ewing, et al. (June 8): Many fields damaged in the Waco area of McLennan County. Numerous complaints received, and much damage observed. (June 15): Damage in the Waco area still reported by many growers. Severe damage reported from the eastern part of Coryell County, many plants being killed.

#### RED SPIDERS (Tetranychus sp.)

Louisiana. M. T. Young (May 23): Severe infestation on young cotton reported from near Baton Rouge.



FOREST AND SHADE - TREE INSECTS

PERIODICAL CICADA (Magicicada septendecim L.)

Massachusetts. A. I. Bourne (June 20): Reported from East Falmouth on June 14 and since that time from Plymouth. Present in large numbers. (June 28): Reported that an adult was observed in a cellar at Osterville on May 11. It is believed that the cicada emerged from the dirt floor. Large numbers collected in the vicinity of Falmouth around the middle of May. Both localities are in Barnstable County.

E. P. Felt (July 1): Reported and observed as occurring in numbers in all the Falmouths, Wianno, Sandwich, and Cotuit, Barnstable County, and at Plymouth.

New York. R. W. Leiby (June 12): Reported as abundant at Saint James, on Long Island.

E. P. Felt (June 25): Colonies found at Cold Spring Harbor and also at Bethpage State Park, both on Long Island.

Mrs. L. Johnson (June): Reported as very abundant in Wyandanch and vicinity on Long Island. Pine, scrub-oak, and maple trees literally covered.

N. Y. State Coll. Agr. News Letter (June): Swarms first appeared at Huntington Road on Long Island on June 4. Since then numerous swarms reported from all around Huntington, Deer Park, and Farmingdale, as well as being found on the Institute grounds. Appeared in enormous numbers during the week of June 10 in a large wooded area 2 miles east of Hicksville and just north of Bethpage. Very numerous in woods northeast of Eastport. Exceedingly numerous in woods south of Jericho Turnpike, at Commack. Numerous about 1 mile east of East Northport, and in woods in Half Hollow Hills, Huntington. Presence reported in several other parts of Long Island.

New Jersey. F. A. Soraci (June 18): No signs of Brood XIV at any point in New Jersey.

Pennsylvania. G. B. Slesman (June 16): Very heavy infestation reported along the William Penn Highway, Huntington County. Quite a few empty pupal cases in woods surrounding Bridgeport, but adults not very plentiful. As only a few adults were found in the vicinity of Sellersville, Bucks County, they were evidently just emerging in this area. Light infestation indicated in the Quakertown area of Bucks County. Several woods scouted in the Bryn Mawr area of Montgomery County, but no evidence of periodical cicada found. Several woods scouted in the Pleasant Valley area of Bucks County, and a few found there, as well as in a wood several miles from Pleasant Valley.

W. R. Walton (June 20): Observed in numbers on June 7 on the South Mountain near Caledonia, Franklin County.

C. A. Thomas (June 24): Found in Chester County as follows: Fairly common south of Parkesburg; very noisy and abundant on June 13 south of Compass; scarce on hills on the south side of Coatesville; very common and

noisy in woods just south and southwest, as well as in scattered woods north of Brandywine; found in small colonies near Downingtown; and a few in small woods along south border of Elverson. Found in small scattered colonies on ridges and common along the Welsh Mountains south of Birdsboro, Berks County.

Maryland. E. N. Cory (May 15): Numerous in Washington County and at the junction of Washington and Allegany Counties. Considerable damage done to peach and apple orchards on Sidling Hill, and a less amount of damage on Tonoloway Hill, Washington County.

J. A. Hyslop (June 6): A single nymph found on a porch at Avonol, near Silver Spring, Montgomery County.

W. R. Walton (June 20): Numbers observed and heard singing in the woods at the foot of Catoctin Mountain, at a point 3 miles west of Hewistown, Frederick County.

F. F. Smith (June 21): Song heard occasionally at Beltsville and in Woodside Park early in June.

Virginia. A. M. Woodside (May): A few present in many localities in Augusta County late in May. Observed at Staunton, Waynesboro, Churchville, and Stuarts Draft, and heard at other places. Observed in very small numbers at Timberville, in Rockingham County, and at Crozet, in Albemarle County.

H. V. Wester (June 6): Collected on a farm at El-Nido, 1 mile east of McLean, Fairfax County.

W. S. Hough (June 15): Noted in apple orchards in Shenandoah, Frederick, and Clarke Counties, particularly near Gore, Frederick County, where they were observed in large numbers.

W. L. McAtee (June 20): A few heard singing on June 9 at a point about  $1\frac{1}{2}$  miles west of Vienna, Fairfax County.

West Virginia. W. S. Hough (June 15): Large numbers have appeared in a young apple orchard at Glengary, Berkeley County.

North Carolina. B. H. Wilford (June 15): Reported as present in northwestern part of Burke County and on the Yancy-Madison County line.

Ohio. R. H. Nelson (June): Noted at the following localities in Lawrence County along the Ohio River: Chesapeake, Sybene, Burlington, North Kenova, South Point, Coal Grove, and Ironton, and along the highway from Ironton to Oak Hill, in Jackson County. Noted that along the Ohio River from Sybene to South Point no cicadas had emerged from the areas deeply flooded in 1937, although, according to report, there was much evidence of egg laying in these areas in 1923. A few were observed to have emerged in areas reached by the crest of the flood but not submerged for the length of time that lower areas were.

J. N. Knull (June): A few adults present 10 miles north of Columbus. One nymphal skin found on June 3 at Clifton, Greene County.

J. S. Houser (June 22): Adults were emerging in abundance on May 22 in the Shawnee Forest, 15 miles northwest of Portsmouth. Reported that first adults were observed 8 miles north of Ripley on June 3, and at a point 4 miles farther south on May 30, and that the brood this year is double the size of the one in 1923. Other reports indicate the brood to be very heavy in southern Ohio.

N. F. Howard (June 24): Present in a young orchard near Chillicothe.

Indiana. J. J. Davis (June 22): Reported as abundant in Brown, Lawrence, and several other counties in the southern half of the State, and as far north as La Fayette, Tippecanoe County.

L. F. Steiner (June 20): Neither observed nor reported in the Vincennes area.

C. O. Mohr (June 24): Recorded near Madison between June 11 and 15.

Kentucky. W. A. Price (June 27): Heavy flights occurred over a large part of eastern and central Kentucky.

Mrs. G. E. Chapman (June 19): Found in the Louisa section of Lawrence County, in the eastern part of the State.

C. O. Mohr (June 24): Recorded between June 11 and 15 within 5 miles of the following localities: Milton, Campbellsburg, New Castle, Shelbyville, Peytonia, Alton, Lawrenceburg, McAfee, Cumberland Falls State Park, Williamsburg, Pineville, and Middlesboro.

Tennessee. G. M. Bentley (June 24): Reported and observed in the following counties: Anderson, Campbell, Coffee, Cumberland, De Kalb, Franklin, Robertson, and Warren.

C. O. Mohr (June 24): Recorded between June 11 and 15 near the following localities: Maynardville, Knoxville, Townsend, and Cookeville.

W. F. Turner (May 20): Taken in a peach orchard in Roane County. (Det. by P. W. Oman) (June 17): Observed on oaks along U. S. Highway No. 27, from Sale Creek, Hamilton County, to the Rhea County line.

A. C. Cole, Jr. (May 20): Extremely abundant on trees over a large area of Dupont Mountain, Chilhowee Range, near Maryville.

J. A. Hyslop (June 4): Numerous and singing in an oak and beech grove at Bristol, Sullivan County.

L. B. Scott (June 25): The periodical cicada has not appeared in the vicinity of Clarksville, Montgomery County, north-central Tennessee. Reported from Springfield, Robertson County.



CANKERWORMS (Geometridae)

New York. M. D. Leonard (June 29): Very few feeding on many trees observed at Flushing.

New Jersey. M. D. Leonard (June 27): Feeding has been very light on oaks this season in Ridgewood.

Pennsylvania. G. B. Slesman (June 4): Spring cankerworm (Paleacrita vernata Peck) found feeding on American elm near Ambler. Estimated that 150 large elms were completely defoliated. Maple and oak also heavily infested. No serious damage found in any other part of this area.

Ohio. J. S. Houser (June): The defoliation of woodlands, ornamental trees, and untreated orchards has been more general than for many years. The fall cankerworm (Alsophila ponetaria Harr.) predominates.

J. N. Knull (June 4): Very abundant in vicinity of Clifton, Groeno County. Oak, basswood, ash, elm, apple, and maple are the trees most severely defoliated. Calosoma wilcoxi Lec. is present in large numbers. (June 16): Severe defoliation of elm, oak, and apple west of Springfield, Clark County.

N. F. Howard (June): Infestation at Columbus is apparently destructive only near the rivers.

E. W. Mendenhall (June 20): P. vernata appeared again in Franklin, Delaware, and Madison Counties, principally on apple and elm trees which they are defoliating considerably.

Indiana. J. J. Davis (June 22): Cankerworms, principally P. vernata, have defoliated many trees, especially elm and apple, in northeastern Indiana. In this area the cankerworm has been prevalent for the last 5 or 6 years, and many trees are dying as the result of repeated defoliation. The infestation, which has centered in northeastern Indiana, has been working southward and now occurs as far south and west as La Fayette.

Illinois. W. P. Flint (June 19): Spring cankerworm damage severe throughout the northern two-thirds of the State. Damage occurred in spotted areas, mainly along streams where elms are most abundant.

Kentucky. W. A. Price (June 27): Spring cankerworms were very abundant in some sections of the inner bluegrass region of Kentucky late in May and completely stripped many oak, elm, hackberry, and other shade trees.

Michigan. R. Hutson (June 22): Fall cankerworms  $\frac{1}{4}$  inch long, were working on elm at East Lansing. By June 20 they had practically completed their activities.

Wisconsin. C. L. Fluke (June 21): Both species present and stripping elm trees in Green, Juneau, Sauk, Marquette, and Richland Counties.

Iowa. H. E. Jaques (June): Spring cankerworms moderately abundant in many counties in the southern half of the State.

North Dakota. F. G. Butcher (June 25): P. vernata observed causing serious defoliation in parks in the eastern part of the State and in the Minot area. Heavy parasitization of the larvae in the Sand Hills Park near Sheldon has materially reduced the population during the last week.

Nebraska. H. D. Tate (June 18): P. vernata found defoliating elms in Redwillow County on June 5.

FOREST TENT CATERPILLAR (Malacosoma disstria Hbn.)

New York. N. Y. State Coll. Agr. News Letter (June 3): Observed in scattered areas in Westchester County, eastern New York. Attacking shade trees, particularly maples and elms.

Pennsylvania. C. L. Griswold (June 16): Severe defoliation of forest trees in sections between Milford and Lake Wallenpaupack and Stroudsburg, in Pike and Monroe Counties. Larvae in last feeding instar.

Ohio. E. W. Mendenhall (June 20): Found damaging hard maples in Franklin County.

Michigan. R. Hutson (June 22): Specimens about one-third grown collected in orchard near East Lansing. It is unusual to find this species in this section of the country. It is becoming abundant in the northern and eastern counties of the State. Material examined has been heavily parasitized.

North Dakota. J. A. Munro (June 1): Reported as abundant over the area north of Towner extending practically to the Canadian border. Larvae small.

Tennessee. G. M. Bentley (June 24): Very few in the State this year.

FALL WEBWORM (Hyphantria cunea Drury)

Virginia. C. O. Bare (June 17): Nearly one-half of the linden, maple, and elm trees in the vicinity of Richmond infested.

C. R. Willey (June 12): As abundant as usual in eastern Virginia.

A. M. Woodside (June 24): Fairly common, but not abundant on plum and other fruits at Staunton, Augusta County.

Tennessee. G. M. Bentley (June 17): Abundant in Knox County.

BROWN-TAIL MOTH (Nyctia phaeorrhoea Donovan)

Maine. F. H. Lathrop (June 14): Heavy outbreak observed in neglected apple orchard near Monmouth, Kennebec County, where several large trees had been defoliated. Similar outbreak reported from Litchfield. This is the most severe infestation observed in the State in recent years.

BIRCH

APHIDS (Aphidae)

Virginia. L. G. Baumhofer (June 7): Calaphis betulella Walsh and Hamamelistes spinosus Shim. found on small white birch trees at Arlington. Leaves distorted by H. spinosus. (Det. by P. W. Mason.)

BRONZED BIRCH BORER (Agrilus anxius Gory)

General. E. P. Felt (June 25): Injuring various species of birch here and there in an area within 50 miles of New York City.

A BIRCH LEAF MINER (Fenusa pumila Klug)

Connecticut. P. Wallace (June 17): Severe injury to gray birch observed throughout Fairfield County, along Merritt Parkway, and reported as abundant throughout the State.

CHOKECHERRY

CHOKECHERRY MIDGE (Contarinia virginianiae Felt)

Nebraska. H. D. Tate (June 18): Chokecherry fruits heavily infested were sent in from Douglas County on June 11.

UGLY-NEST CATERPILLAR (Cacoecia cerasivorana Fitch)

Connecticut. P. Wallace (June 10): Abundant on chokecherry at Cheshire, New Haven County.

CYPRESS

A BUDMOTH (Recurvaria variella Chamb.)

Ohio. J. S. Houser (June 22): Bald cypress caterpillar seriously damaged bald cypress at Oxford and Wooster in 1939 and, in addition to these localities, was found in Cincinnati this year, the damage being more severe than last year.

ELM

ELM LEAF BEETLE (Galerucella xanthomelaena Schr.)

Massachusetts. J. V. Schaffner, Jr. (June 14): Adults were reported as abundant in a house in Ipswich on May 21.

K. K. Stimson (May 28): Noticed in house for first time in Hamilton on May 17. (Det. by H. S. Barber.)



Connecticut. J. V. Schaffner, Jr. (June 14): Adults reported as abundant in house at Ansonia. Also observed feeding on freshly opened leaves of elm nearby.

New Jersey. C. L. Griswold (June 6): Adults first observed feeding on elm leave in Morristown vicinity on May 12. In one locality on May 27 the adult population feeding on leaves was large, and many leaves were lacelike in appearance. First egg deposition of season noted on May 27. Hatching has not occurred.

Pennsylvania. T. L. Guyton (June 27): Causing browning of foliage of Chinese elm at Marietta.

Virginia. C. O. Bare (June 17): Generally present on elm trees at Richmond. Foliage on some trees severely injured.

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus Marsham)

Connecticut. P. Wallace (June 12): More abundant than previously in Fairfield and New Haven Counties. Egg tunnels with 60 eggs and larval tunnels 3 mm. long noted in Greenwich at this time.

ELM FLEA BEETLE (Altica ulmi Woods)

Connecticut. P. Wallace (June 15): Adults feeding on elm, apple, and pear at Hamden and Cheshire. Much more abundant than usual.

MOURNING-CLOAK BUTTERFLY (Hamadryas antiopa L.)

Ohio. E. W. Mendenhall (June 20): Spiny elm caterpillar found damaging elms in Franklin County.

Minnesota. A. G. Ruggles and assistants (June): Moderately abundant on elm at St. Paul and Minneapolis.

Utah. G. F. Knowlton (June 18): Partially defoliating several elms at Richmond.

APHIDS (Eriosoma spp.)

New York. M. D. Leonard (June 29): Very light infestation by E. americana on elms in one section of the World's Fair grounds. Several curled leaves on one tree early in the month.

Minnesota. A. G. Ruggles and assistants (June): E. lanigerum Hausm. moderately abundant in St. Paul, especially on elm.

Utah. G. F. Knowlton and G. S. Stains (May 31): Aphids, E. americanum Riley, have seriously curled elm leaves at Richmond.

Montana. H. B. Mills (June 19): E. americanum found on elm in vicinities of Bozeman, Dillon, and Big Timber. More apparent than in the last month.

ELM COCKSCOMB GALL (Colopha ulnicola Fitch)

Michigan. R. Hutson (June 22): Received from Grand Rapids, Centerville, East Lansing, and Northville.

Minnesota. A. G. Ruggles and assistants (June): Abundant on elm at St. Paul.

EUROPEAN ELM SCALE (Gossyparia spuria Mod.)

New York. R. E. Horsey (June): Numerous specimens noted on Huntingdon and Scotch elms at Rochester on June 18.

Nebraska. H. D. Tate (June 18): Complaints on May 29 and June 11 from Cheyenne County of this scale attacking elms.

Utah. G. F. Knowlton and F. C. Harnston (June 14): Damaging elms at Beaver, Milford, and Logan. Some young trees seriously affected.

FIR

AN APHID (Mindarus abietinus Koch)

Pennsylvania. G. B. Sleesman (June 11): Heavy infestation noted on Nordmann fir in the Philadelphia area. Winged adults taken from a heavy infestation on Abies concolor nearby. About 2 to 3 weeks were spent on the new growth of A. concolor, then the winged adults left the fir for some other host plant.

GROUNDSELBUSH

A LEAF BEETLE (Trirhabda bacharadis Web.)

Virginia. L. A. Hetrick (June 24): Full-grown larvae found feeding on foliage of gall-bushes on edges of marshes at West Point on May 26. On June 1 the larvae entered the soil, and on June 24 adults were emerging. (Det. by H. S. Barber.)

HICKORY

HICKORY PHYLLOXERA (Phylloxera caryaecaulis Fitch)

Connecticut. E. P. Felt (June 25): Sufficiently abundant at Bristol to cause considerable dropping of hickory leaves on many trees.

New York. R. E. Horsey (June): Very numerous on a large native hickory at Rochester on June 18.

LARCH

WOOLLY LARCH APHID (Chermes strobilobius Kltb.)

Pennsylvania. J. S. Pinckney (June 18): Heavily infesting lower half of larch trees at Mt. Holly Springs.

LARCH SAWFLY (Lygaeonotus erichsonii Htg.)

Pennsylvania. J. S. Pinckney (June 18): Entire larch tree infested at Mt. Holly Springs.

MAPLE

WOOLLY ALDER APHID (Prociphilus tessellatus Fitch).

Connecticut. E. P. Felt (June 25): Alder blight aphid locally abundant in the Stamford area.

Maryland. E. N. Cory (June 4): Heavy infestation in St. Marys County.

Mississippi. C. Lyle (June 25): Specimens received from Lee County, where they were feeding on maple.

NORWAY MAPLE APHID (Periphyllus lyropictus Kess.)

Indiana. L. F. Steiner (June 24): Very abundant on maples in southwestern Indiana.

COTTONY MAPLE SCALE (Pulvinaria vitis L.)

Tennessee. G. M. Bentley (June 11): Causing injury to maples in Knox, Henry, and Cocke Counties.

Utah. G. F. Knowlton (June 7): Heavily attacking twigs of maple in Heber.

MAPLE NEPTICULA (Nepticula soricopeza Zell.)

Ohio. J. S. Houser (June 6): Leaf-stalk borer occurs on Norway maples over a range at least 6 miles in diameter and is causing notable leaf losses at Youngstown.

MAPLE LEAF STEM BORER (Priophorus acericaulis MacG.)

Connecticut. P. Wallace and B. H. Walden (June 4): Ground covered with leaves under two maples. One-third of leaves on those two trees browned.

MAPLE LEAF SPOT (Coccidomyia ocellaris O. S.)

Connecticut. E. P. Felt (June 25): Very abundant locally on red maple.

BLADDER MAPLE GALL (Phyllocoptes quadripes Shin.)

General. J. V. Schaffner, Jr. (June 14): Number of specimens and inquiries regarding control measures, received in June from eastern Massachusetts and the vicinity of New York City, indicate that this pest is very prevalent in those areas.

Michigan. R. Hutson (June 22): Reported from counties in the southeastern part of the State.



Ohio. T. H. Parks (June 20): Very abundant on leaves of some maple trees and received from widely separated localities in Ohio.

OAK

AN OAK LEAF ROLLER (Argyrotoxa somipurpurana Kearf.)

New Jersey. C. W. Collins and assistants (June 6): Noticeable defoliation of pin oaks now evident in the vicinity of Morristown. Insect caused similar injury in same general areas in 1938 and 1939.

PINE

EUROPEAN PINE SHOOT MOTH (Rhyacionia bueliana Schiff.)

Connecticut and New York. E. P. Felt (June 25): Becoming abundant and injurious in southwestern Connecticut and southeastern New York.

Michigan. R. Hutson (June 22): Larvae about two-thirds grown received from East Lansing on May 31. Other larvae received from Marshall, Plymouth, Royal Oak, Detroit, and Cohoctah were practically full grown on June 20.

NANTUCKET PINE SHOOT MOTH (Rhyacionia frustrana Comst.)

Virginia. L. A. Hetrick (June 24): Most of the first generation had emerged in New Kent County by June 19. The first generation was still in the larval stage in Mathews County on June 21.

A PINE NEEDLE MINER (Exoteleia pinifoliella Chamb.)

Massachusetts. H. A. Boss et al. (June 24): Pitch pine needle miner abundant this year in the vicinity of Westfield. In a number of places several trees were conspicuously affected. A 2-acre grove had a distinct brownish appearance.

J. V. Schaffner, Jr. (June 24): Observed as abundant in vicinity of Sudbury during May.

ZIMMERMAN'S PINE TIP MOTH (Pinipestis zimmermanni Grote)

New York. R. E. Horsey (June): Larvae reported as numerous and destructive on rugho pine and less common on two other varieties in ornamental plantings at Rochester on June 12.

A SAWFLY (Acantholyda erythrocephala L.)

New York. E. P. Felt (June 25): Occurred in numbers on several pine trees at Mt. Kisco.

New Jersey. C. L. Griswold (June 6): First adults observed this spring on May 6 at Morristown. Egg laying began on May 7, and first hatching observed on May 29. Larvae still in first instar on June 6.

A PINE SAWFLY (Neodiprion sertifer Geoff.)

New Jersey. C. L. Griswold (June 6): Observations indicate a further population increase in this State. General hatching occurred on May 10 in Morris County, and larvae were in last feeding instar on June 6. Considerable complete needle defoliation, instances of partial and complete severing of 1940 pine laterals and leaders, and gouging in the bark itself were observed.

WHITE-PINE WEEVIL (Pissodes strobi Peck)

New England. E. P. Felt (June 25): Locally injurious to various pines in southern New England.

Michigan. R. Hutson (June 22): Reported from Beulah and Shelby on May 24.

A WEEVIL (Hylobius radicis Buch.)

Massachusetts. J. V. Schaffner, Jr. (May): Infestation in a plantation of Corsican and Scotch pine at Weston still persists. Many adults hibernated beneath loose bark and in the duff at base of trees, and many larvae, from one-half to nearly full grown, in their galleries in the bark and cambium of the host trees.

A SCARABAEID (Anomala oblivia Horn)

Virginia. L. A. Hetrick (June 19): Feeding on the basal portions of tender new-growth needles of Pinus taeda. Beetles seem to be generally present in tidewater Virginia. Feeding of adults causes the needles to bend over and die. (Det. by E. A. Chapin.)

AN APHID (Pineus pinifoliae Fitch)

General. J. V. Schaffner, Jr. (June 24): Attracting considerable attention in natural stands of red spruce throughout the southern Adirondacks in New York, and in parts of New Hampshire, Vermont, and Massachusetts. Reported as abundant in many localities.

PINE SPITTLE BUG (Aphrophora parallela Say)

Massachusetts. J. V. Schaffner, Jr. (June 24): Very common throughout many plantations of Scotch pine in eastern part of the State. Very heavy infestation observed in a plantation of Scotch pine in Ashby.

A SCALE (Matsucoccus gallicolus Morrison)

Pennsylvania. T. J. Parr (June 24): Egg masses hatched at the usual time and young nymphs had settled on the new growth of attacked pitch pines by the last week in May at Mont Alto and Mount Union.

SPRUCE

EUROPEAN SPRUCE SAWFLY (Gilpinia polytoma Htg.)

General. P. B. Dowden (June 24): Emergence of adults considerably delayed this year at centers of heavy infestation in southern Vermont and New Hampshire, owing to unusually wet and cold spring weather. In 1939 emergence at these points was heavy on about June 1, whereas this year general emergence was not noted until June 13.

A SPRUCE NEEDLE MINER (Taniva albolineana Kearf.)

New York. J. V. Schaffner, Jr. (June 14): Larvae received in May. Reported that there was a light infestation on blue spruce at Boonville. Adults emerged from material on June 8.

Minnesota. A. G. Ruggles and assistants (June): Very abundant on spruce at New Brighton.

SITKA SPRUCE GALL APHID (Adelges cooleyi Gill.)

Pennsylvania. G. B. Sleesman (June 19): Heavy infestation on Douglas fir and blue spruce in the Philadelphia area.

A TUSSOCK MOTHS (Hemerocampa sp.)

Montana. H. B. Mills (June 19): About 100 larvae per tree (Englemann spruce) 15 feet high, in the vicinity of Billings. Several trees defoliated. This is not H. pseudotsugae McD. nor H. vetusta Bdv.

SWEETGUM

A SCALE (Cryptophyllaspis liquidambaris Kot.)

Delaware. E. P. Felt (June 25): Sweetgum scale occurs commonly on a group of sweetgum trees at Wilmington. (Det. by E. Morrison.)

TUNG-OIL TREE

CORN EAR WORM (Heliothis ornigera Hbn.) and TOBACCO BUDWORM (H. virescens F.)

Florida. J. H. Painter (June 12): At Lamont larvae were found at base of tree, some fruit had dropped, and other damaged fruit was still on tree. (Det. by C. Heinrich.)

WILLOW

SPOTTED WILLOW LEAF BEETLE (Chrysomela lapponica L.)

Ohio. T. H. Parks (June 20): Beetles and larvae very abundant on willow; severe defoliation of some trees generally.



Indiana. L. F. Steiner (June 24): Caused serious damage to willows throughout Vincennes and surrounding areas during the last 6 weeks.

Michigan. R. Hutson (June 22): Reported from Detroit, Lansing, and St. Johns.

GOTTONWOOD LEAF BEETLE (Chrysomela scripta F.)

Virginia. L. A. Hetrick (June 24): Adults abundant on willows at West Point on June 12.

Kentucky. W. A. Price (June 27): Much damage to willows at Danville, Mayfield, and Louisville.

A SCALE (Chionaspis salicis-nigræ Walsh)

Michigan. R. Hutson (June 22): Reported from St. Johns, Leslie, East Lansing, and Detroit. This insect is becoming of increasing economic importance where willows are used for windbreaks.

A GALL MIDGE (Rhabdophaga sp.)

General. E. P. Felt (June 25): Found injurious to willow twigs. Wood so thickly studded with the larval cells as to practically girdle and kill branches in Stamford, Conn., and Princeton, N. J.

INSECTS BREEDING IN HURRICANE-FELLED TIMBER IN NEW ENGLAND

By H. A. Bess :

Several millions board feet of timber were blown down in New England by a hurricane in September 1938. Immediate steps were taken and large quantities of this timber were salvaged before it was damaged appreciably by insects. Observations are being made on the important species encountered and some of the more economic ones are discussed below.

In salvaging the hurricane-felled pine timber, roundheaded borers (Cerambycidae) were the most important insects concerned. Logs heavily attacked by certain species of roundheaded borers are rendered practically worthless within a comparatively short time. Monochamus scutellatus Say rates first in economic importance and is exceptionally abundant this season. A large part of the present population bred in larger limbs and tops of hurricane-felled trees, and in the smaller-dimension material in the wind-thrown forests. Large numbers of Asemum noestum Hald. bred last season in stumps and larger logs. It is important economically, because rather extensive tunnels are made through the sapwood and heartwood. Several specimens of Tetropium cinnamopterum Koy., Graphisurus sp., and Rhagium lineatum Oliv. have been observed. Flatheaded borers (Buprestidae) are abundant, but since their tunnels are confined to the cambium and outer sapwood they have done little damage to the hurricane-felled timber.

Bark beetles (Scolytidae) were found attacking this timber. They confine their feeding to the cambium, causing no direct damage to the potential lumber, but wood-staining fungi are often introduced by certain species. Ips calligraphus Germ., I. pini Say, Dendroctonus valens Lec., and Pityophthorus sp. (?)

appear to be the more important ones encountered in the living trees. So far very few trees have been killed by bark beetles. The following additional species have been found breeding in white pine: Orthotomicus caelatus Eichh., Ips grandis collis Eichh., Pityogenes hopkinsi Swaine, and Lylurgops pinifex Fitch.

## INSECTS AFFECTING GREENHOUSE

### AND ORNAMENTAL PLANTS

#### A SCALE (Parlatoria chinensis Marlatt)

Missouri. J. A. Denning (May 13): Infestation which killed a number of althea noted at St. Louis. (Det. by H. Morrison.)

#### COTTONY-CUSHION SCALE (Icerya purchasi Mask.)

Mississippi. C. Lyle (June 25): There were several reports of this insect on shrubbery in the southeastern part of the State.

Arizona. C. D. Lebert (June): Several infestations observed on citrus and ornamentals in the Phoenix area during June. A few pittosporum plants killed, but in most cases Rodolia cardinalis Muls. is well established and taking care of the situation adequately.

#### A MEALYBUG (Pseudococcus sp.)

Ohio. J. S. Houser (June 1): Reported so abundant on the roots of bentgrass that the turf is dying. Insects are found 2 or 3 inches below the soil surface. (Det. by H. Morrison.)

#### FOUR-LINED PLANT BUG (Poecilocapsus lineatus F.)

Ohio. N. F. Howard (June 16): Present on a variety of young tender foliage at Columbus, especially in shaded or partly shaded places, attacking veronica, trumpet vine, chrysanthemum, mint, and elderberry.

Indiana. J. J. Davis (June 17): Observed at New Albany and Frankfort damaging phlox and other garden plants.

#### MULBERRY WHITEFLY (Tetraleurodes mori Quaint.)

Connecticut. E. P. Felt (June 25): Found in numbers on bittersweet at Westport.

#### AN APHID (Capitophorus gilllettei Theob.)

New Jersey. M. D. Leonard (June 12): Several Russian-olive bushes at Ridgewood, previously uninfested, were found to have scattered colonies on the newer leaves. This species has not been noted on smartweed, which grows in abundance near these shrubs.

ARBORVITAE

ARBORVITAE LEAF MINER (Argyresthia thuiella Pack.)

Connecticut. E. P. Felt (June 25): Somewhat prevalent at Meriden.

Maryland. E. N. Cory (June 14): Large numbers were seen in flight at Hagerstown.

A BUG (Lygaeus bolfragei Stal)

Texas. R. K. Fletcher (June 14): Severe damage to arborvitae in and about Temple, Bell County.

BOXWOOD

BOXWOOD LEAF MINER (Monarthropalpus buxi Laboulb.)

Tennessee. G. M. Dentley (June 8): Found at Bristol, Sullivan County. Five infested boxwoods were destroyed. These are the only boxwood leaf miners reported in the State.

CRAPEMYRTLE

CRAPEMYRTLE APHID (Myzocallis kahawaluokalani Kirk.)

Virginia. L. A. Hetrick (June 24): Abundant and injurious to plants at West Point.

Alabama. J. M. Robinson (May 22): Observed on foliage covered with honeydew at Auburn.

GLADIOLUS

GLADIOLUS THRIPS (Taeniothrips simplex Morison)

Tennessee. G. M. Dentley (June 19): Reports received from Knox County.

HOLLYHOCK

AN APHID (Macrosiphum ambrosiae Thos.)

Utah. G. F. Knowlton (June 15): Extremely abundant on hollyhocks at Fort Duchesne and Logan.

LEAF BEETLES (Chrysomelidae)

Utah. G. F. Knowlton (June 15): Riddling foliage in many gardens at Logan and some at Brigham.



HONEYSUCKLE

AN APHID (Rhopalosiphum mellifocum Hottes)

New Jersey. M. D. Leonard (June 27): Moderate infestation on large honeysuckle bush at Ridgewood. Reported as being more numerous early in the month.

IRIS

IRIS WEEVIL (Mononychus vulpeculus F.)

Massachusetts. A. I. Dourne (June 6): Specimens sent in from Northampton, in central Hampshire County, with report that they were very abundant and causing considerable damage to the flower beds and also foliage of large plantings.

Michigan. R. Hutson (June 22): Reported from Ann Arbor and Lansing. Common in wild iris throughout the southern part of the State.

IRIS DORER (Macronoctua onusta Grote)

Michigan. R. Hutson (June 22): Reported from Oxford and East Lansing.

JUNIPER AND CEDAR

JUNIPER WEBWORM (Dichomeris marginellus F.)

Maryland. F. F. Smith (June 22): Severe damage noted on junipers in a number of ornamental plantings in the Silver Spring area. In one planting a thorough cleanup was made in 1938; light infestation occurred in the spring of 1939, became severe, and required another treatment in 1940 to save the plants.

Michigan. R. Hutson (June 22): Reported from Detroit, Kalamazoo, Spring Lake, Lansing, and Battle Creek.

A WEEVIL (Pachylobius picivorus Germ.)

Mississippi. C. Lyle (June 25): Specimens of the pitch-eating weevil were found on deodar trees in Choctaw County early in June.

LARKSPUR

CYCLAMEN MITE (Tarsonemus pallidus Banks)

Minnesota. A. G. Ruggles and assistants (June): Very abundant at Saint Paul.

LILAC

OYSTERSHELL SCALE (Lepidosaphes ulni L.)

New York. R. E. Horsey (June 15): Lilac branch badly encrusted with old and newly set scale brought in for identification from a town south of Rochester.

Minnesota. A. G. Ruggles and assistants (June): Very abundant in Saint Paul on buckthorn and lilac.

LILAC BORER (Podosesia syringae Harr.)

Michigan. R. Hutson (May 24): Reported from Saint Joseph.

RHODODENDRON

RHODODENDRON MIDGE (Giardomyia rhododendri Felt)

Massachusetts. E. P. Felt (June 25): Caused some injury in the Boston area.

New Jersey. E. P. Felt (June 25): Some injury at South Orange.

ROSE

ROSE SAWFLY (Caliroa aethiops F.)

Nebraska. H. D. Tate (June 18): Found attacking rose plants in Sarpy County on June 6 and in Hall County on June 13.

Kansas. H. R. Bryson (June 25): Caused considerable injury to roses during early part of month.

ROSE LEAF BEETLE (Nodonota puncticollis Say)

Pennsylvania. E. J. Udine (June 6): Numerous in some localities around Carlisle. Flowers and leaves eaten.

ROSE APHID (Macrosiphum rosae L.)

New Jersey. M. D. Leonard (June 27): Very few aphids observed on rose bushes and vines of several varieties at Ridgewood.

SNOWBALL

DEAN APHID (Aphis rumicis L.)

New York. M. D. Leonard (June 29): Several snowball bushes, reported as moderately infested at Jackson Heights on May 27, have cleared up.

SPIREA

SPIREA APHID (Aphis spiraeicola Patch)

New York and New Jersey. M. D. Leonard (June 27): Light infestations observed on many ornamental plantings at Jackson Heights, N. Y. Light infestation remaining at Ridgewood, N. J., on spirea, which a few weeks ago was heavily infested.

YEW

A PSYLLID (Paurocephala ilicis Ashm.)

Texas. R. K. Fletcher (June 21): Noted attacking yaupon in Jefferson County on June 13 and in Colorado County on June 14.

WEEVILS (Brachyrhinus spp.)

New York. M. D. Leonard (June 15): Reported as damaging several yew plants about 2 feet high, which were planted in boxes at Flushing.

INSECTS ATTACKING MAN AND

DOMESTIC ANIMALS

MAN

TROPICAL RAT FLEA (Liponyssus bacoti Hirst.)

West Virginia. F. C. Bishopp (June 29): Specimens submitted from Romney, where an old brick house was infested. (Det. by H. E. Ewing.)

North Carolina. F. C. Bishopp (June 27): Reported as occurring in great numbers in a house at Beaufort. (Det. by H. E. Ewing.)

Mississippi. C. Lyle (June 25): Specimens received from Noxubee and Madison Counties, where they were troublesome in houses.

MOSQUITOES (Culicinae)

Delaware. L. A. Stearns (June 4): Tremendous brood of Aedes sollicitans Walk. just emerged in Port Mahon area, causing great discomfort.

Ohio. N. F. Howard (June 24): Prevalent during the month at Columbus.

Utah. G. F. Knowlton (June 13): Very annoying and abundant.

DEER FLIES (Chrysops spp.)

Delaware. L. A. Stearns (June 18): C. flavida Wied. and C. fuliginosa Wied. were very abundant and annoying in the vicinity of Odessa, New Castle County.

Florida. F. C. Bishopp (June 25): Numerous during the last week in May, but fewer were seen on cattle at Government farm after June 7 at Panama City. Exceedingly annoying to both man and animals from June 1 to 19 in Bay County.

CHIGGER (Eutrombicula alfreddugesi Oud.)

Ohio. N. F. Howard (June 24): Became prevalent during the month at Columbus.



AMERICAN DOG TICK (Dermacentor variabilis Say)

New Hampshire. F. C. Bishopp and C. N. Smith (June 29): Survey from June 26 to 28 in southern New Hampshire, especially in the vicinity of Lake Winnepesaukee, indicates that the infestation is distinctly localized. Infestation apparently uniformly heavier on the northeastern side of the lake, particularly in the area near Melvin and Moultonboro. Reported as numerous around Ossipee, near Freedom, and as occurring at Sandwich, Weirs, Alton, and Wolfeboro. Specimens taken for the first time at Tamworth and just south of Conway. Wood ticks said to have been in the former locality for at least 50 years, but this year was the first appearance of the pest near Conway. Ticks reported as having been somewhat more abundant than normal this season; decline in numbers during the last week or two.

Indiana. J. J. Davis (June 22): Unusually abundant throughout the State.

Nebraska. H. D. Tate (June 18): Specimen taken from the arm of a man on May 27 in Butler County.

CATTLE

HORN FLY (Haematobia irritans L.)

New Hampshire. F. C. Bishopp and C. N. Smith (June 29): From June 26 to 28 infestations ranged from 10 to 75 per animal in southern New Hampshire. At Melvin they were more numerous than at other points noted. About 50 flies per animal there, and some lesions on cattle from their bites.

Florida. A. L. Brody (June 25): Thousands seen on animals at Panama City. They were continuously numerous during the last month. It is reported from northwest and north of Panama City that the flies decreased considerably during June, and animals examined on June 19 on the highway northwest and north of Panama City had only 5 to 10 flies per head, whereas on June 18 animals at Panama City had thousands per head.

Missouri. E. T. Rainwater (June 27): Severe in the bluegrass region, from Chillicothe to Saint Joseph.

Kansas. H. T. Rainwater (June 27): Severe in the vicinity of Emporia.

Mississippi. S. W. Simmons (June 2): Very annoying at Electric Mills to dairy cattle; as many as 200 noted per animal.

Texas. D. C. Parman (June 18): The horn fly has practically disappeared from the very heavy infestation observed about Uvalde in May. No extensive examinations made to determine the cause of this disappearance, but dung beetles, especially Canthon spp., were very active during May. The decrease in horn-fly population was from approximately 500 to 3,000 per animal early in May to 0 to 100 at present.

SCREWORM (Cochliomyia americana C. & P.)

Oklahoma. D. C. Parman (June 20): Unofficial records indicate that the fly reached Meers on about June 12, about a week or 10 days later than normal.

Texas. D. C. Parman (June 20): As indicated by status-trap catches, the general population over the escarpment area, in southwestern Texas, is approximately 60 percent of last year's population, and as that was rather low, it is indicated that this year's population is about 40 percent of the average for the last 5 years. This year showed the lowest May population during this 5-year period. General population in this area for March was normal. During the latter half of May on the lower escarpment a high population of 1,206 C. americana was indicated in 1 local area for the trapping period. The central escarpment showed a peak population of 637. It is indicated that the populations did not build up on the Edwards Plateau during May, peak catches in the southern area amounting to 122 adults. As of June 15, catches in traps along the lower escarpment show a tendency toward decrease of population, the high catch being 385. Along the central escarpment there has been a considerable increase in population, the high catch being 1,059. No very considerable increase indicated in the Plateau region. It is considered that the screwworm problem has been less severe this year than for several years, with only a few exceptions in local areas. Inquiries have revealed that the high populations indicated by trap catches locally have developed from infestations in late calves. Records indicate that migration of C. americana to the Edwards Plateau was about a week or 10 days later than normal.

STABLEFLY (Stomoxys calcitrans L.)

Kansas. H. R. Bryson (June 25): Abundant and causing considerable annoyance to livestock on farms. Also abundant in towns.

POULTRY

CHICKEN MITE (Dermanyssus gallinae Deg.)

Michigan. R. Hutson (June 22): Appeared in a large chicken plant at South Lyons in unusual numbers. They were apparently from pigeons and sparrows driven out of a loft. Also an infestation occurred in a public building near Lansing.

HOUSEHOLD AND STORED-PRODUCTS INSECTS.

TERMITES (Isoptera)

Delaware. L. A. Stearns (May 6): Infestation reported in a dwelling in Newark, New Castle County.

Maryland. E. N. Cory (June 17): Noted in buildings generally.

Michigan. R. Hutson (June 22): Received from Kalamazoo, Muskegon, Grand Rapids, Pawamo, and Decatur during June.

Oklahoma. C. F. Stiles (June 26): Injury reported during the month from Bryan, Oklahoma, Tulsa, and Payne Counties.

ANTS (Formicidae)

Connecticut. N. Turner (June 20): Numerous complaints were received about the unusual number of lawn ants. Species involved seem to be Formica fusca L., F. exsectoides Forel, Lasius interjectus Mayr, and Tetramorium caespitum L.

New York. R. E. Horsey (June 18): Camponotus herculeanus pennsylvanicus Deg. was observed on June 4 and 18, tunneling in the trunks of two live Sophora japonica in widely separated situations in Rochester. Bark at the base of the tree had been injured, leaving the wood exposed so that the ants could enter the trunk.

M. R. Smith (June 3): Ants received from Binghamton were found to be T. caespitum.

New Jersey. M. R. Smith (June 7): T. caespitum L. was received from Mickleton on May 28.

Pennsylvania. M. R. Smith (June 1): Specimens of T. caespitum were received from Drexel Hill.

Maryland. E. N. Cory (June 17): Numerous complaints received of ants attacking lawns and entering houses.

Virginia. R. A. St. George (June 6): There were heavy emergences of C. castaneus Latr. in Colonial Village. Winged adults covered show windows and nearby sidewalk around several buildings early in the evening (9 p. m.). (Det. by M. R. Smith.)

Ohio. M. F. Howard (June): Ants at Columbus seem to be more abundant on lawns than average, judging from complaints received.

Indiana. J. J. Davis (June 22): Ants were unusually troublesome in lawns and gardens. Reports were received from all parts of the State. C. herculeanus pennsylvanicus was common in many localities.

Missouri. J. A. Denning (May 31): T. caespitum was reported from Saint Louis as attacking various plants. (Det. by M. R. Smith.)

North Dakota. F. G. Butcher (June 25): Ants were reported as moderately abundant.

Nebraska. H. D. Tate (June 18): During the period May 16 to June 15 ants were annoying both indoors and outdoors. These reports came chiefly from Douglas, Harlan, Merrill, and Pawnee Counties. Specimens of C. herculeanus pennsylvanicus were sent in from Buffalo County on May 23.



Mississippi. C. Lyle (June 25): The fire ant (Xolenopsis xyloni McCook) was causing annoyance in a house in Sunflower County. Also reported as abundant in Warren County. The tiny black ant (Monomorium minimum Buckl.) was annoying in some houses in Hinds County.

Oklahoma. C. F. Stiles (June 26): The red harvester ant (Pogonomyrmex barbatus F. Smith) is on the increase throughout much of the State, and many complaints have been received during the last few weeks.

Texas. R. K. Fletcher (June 21): P. barbatus was reported from Dallas County on June 3, Harris and Fayette Counties on May 21, and Haskell County on June 21.

Arizona. C. D. Lebert (June 4): S. xyloni formed nests all around the base timbers of a turkey brooder at Phoenix. As they crawled into the brooder, the young turkeys picked them up. The ants apparently were stinging the turkeys in the throat, causing partial paralysis and subsequent death. Several dozen turkeys lost before control measures were applied.

#### CARPENTER BEE (Xylocopa virginica Drury)

District of Columbia. R. A. St. George (June 3): Several requests for information concerning control have been received from Washington and vicinity. They were found on rafters, under porches, and on other exposed exterior woodwork.

#### GERMAN COCKROACH (Blattella germanica L.)

Nebraska. H. D. Tate (June 18): Reported from Furnas County as infesting a store building.

Alabama. J. M. Robinson (April 26): Reported in a dwelling at Samson.

Mississippi. C. Lyle (June 25): Specimens were received from Scott County late in May.

#### ORIENTAL COCKROACH (Blatta orientalis L.)

Minnesota. A. G. Ruggles and assistants (June): Moderately abundant in houses at Saint Paul and Minneapolis.

#### A COCKROACH (Parcoblatta pennsylvanica Deg.)

Indiana. J. J. Davis (June 22): Cockroaches are a common problem in many localities. The outstanding roach problem during the last month has been this woods roach, which has been reported from many localities.

Minnesota. A. G. Ruggles and assistants (June): Moderately abundant in houses at Saint Paul and Minneapolis.

A POWDER POST BEETLE (Lyctus planicollis Lec.)

Washington. M. A. Yothers (June 1): Adults were found emerging from oak window frames inside a house, built 20 to 25 years ago, in the Yakima Valley.

CLOVER MITE (Bryobia praetiosa Koch)

Minnesota. A. G. Ruggles and assistants (June 15): Several houses in a Saint Paul block were badly infested with this mite, crawling over the walls.

FLOUR BEETLES (Tenebrionidae)

Iowa. R. T. Cotton (June 5): Cynaesus angustus Lec. recently found infesting stored corn in Iowa and Tama Counties together with Tribolium madens Charp. The latter was also taken in Ida County infesting stored corn and ground feed and in Sioux County infesting bran.

WHARF BORER (Nacorda melanura L.)

Michigan. R. Hutson (June 22): Received from Battle Creek. This is the second appearance of this pest in the State. Last year it was found destroying timbers in a building at Detroit.

A PYRALID (Aphonia gularis Zell.)

California. C. K. Fisher (May 24): Found in dried fruit in six packing plants visited by the writer in the San Jose district. Observed in packing plants in Oakland at various times.

